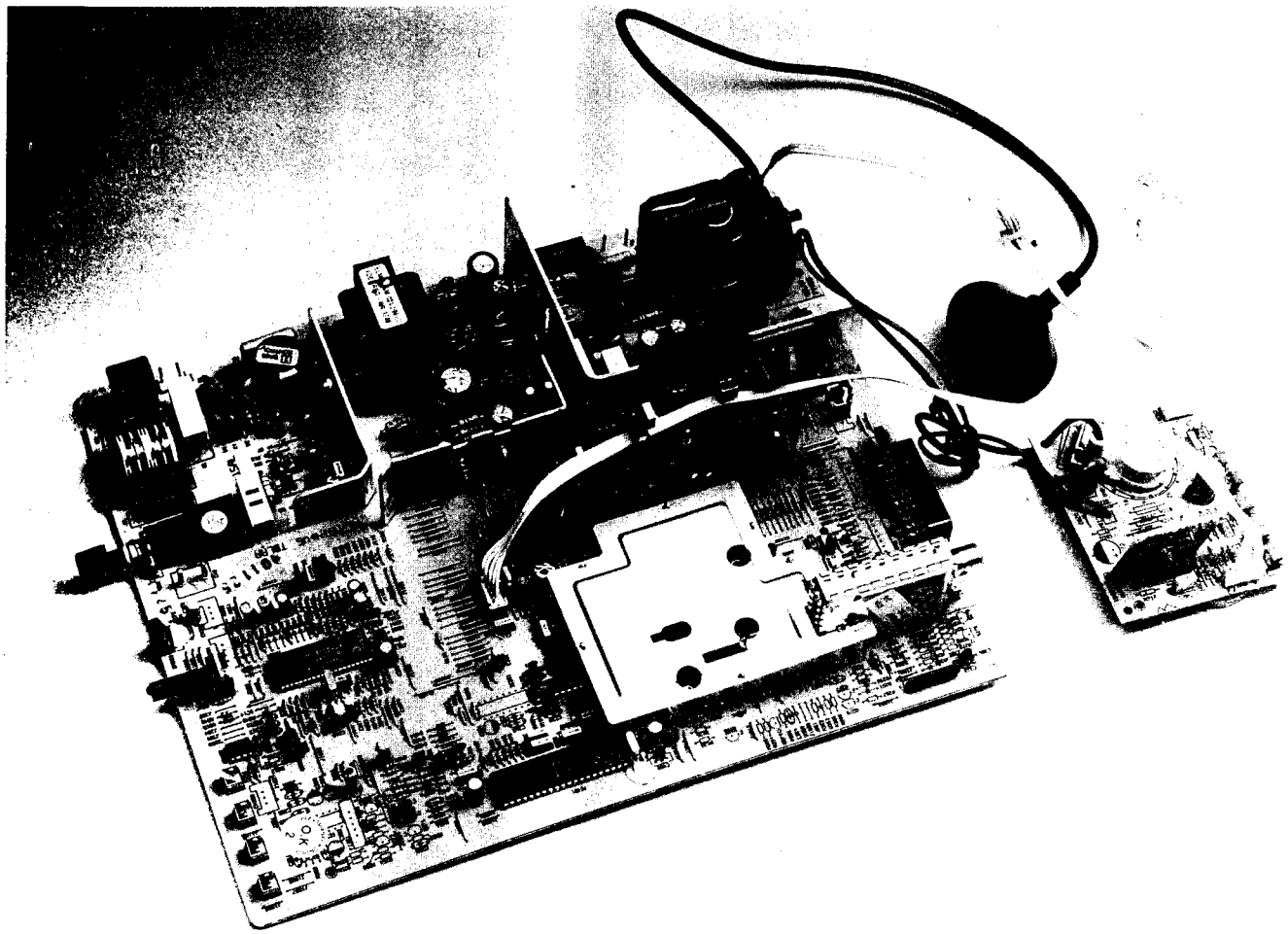
MAGNUM TV5510

MODEL

SERVICE MANUAL

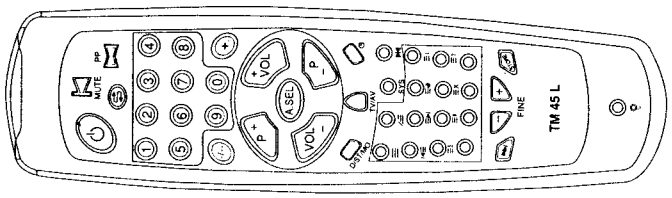
SERVICE MANUAL

PT 9601 CHASSIS



⚠ These sets are provided with the TUV sign, thus fulfilling the IEC-65-regulations. In orden to maintain the safety of the sets, the components marked with a suchlike symbol in the service manuals must be replaced by original parts.
It is also important that components are placed in the same position.

Note! after optimum adjustments in the picture tube factory, picture tube and deflection yoke represent a firmly connected unt.
Picture tube warranty is expiring in case
- the position of the deflection yoke or the correction magnets is changed,
- mounting nuts or sealings are loosened.



TM 45 L

Modification reserved

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RECOMMENDATION FOR SERVICE REPAIRS

1- Use only original spare parts. Only use components with the same specifications for replacement.
2- Original fuse value only should be used.
3- Main leads and connecting leads should be checked for external damage before connection. Check the insulation.
4- Parts contributing to the safety of the product must not be damaged or obviously unsuitable. This is valid especially for insulators and insulating parts.
5- Thermally loaded solder pads are to be sucked off and re-soldered.
6- Ensure that the ventilation slots are not obstructed.
7- Potentials as high as 25 KV are present when this receiver is operating. Operation of the receiver outside the cabinet or with back cover removed involve a shock hazard from the receiver.
Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment.
Perfectly discharge the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken.
Glass frogments will be violently expelled.
Always discharge the picture tube anode to the receiver chassis to keep of the shock hazard before removing the anode cap.
8- Keep wire away from the high voltage or high temperature components.
9- When replacing a wattage resistor in circuit board, keep the resistor 10 mm away from circuit board.

HANDLING OF MOS CHIP COMPONENTS

MOS circuit requires special attention with regard to static charges. Static charges may occur with any highly insulating plastics and can be transferred to persons wearing clothes and shoes made of synthetic materials. Protective circuits on the inputs and outputs of mos circuits give protection to a limited extend only due to time of reaction.

Please observe the following instructions to protect the components against damage from static charges.
1- Keep mos components in conductive package until they are used. Most components must never be stored in styropor materials or plastic magazines.
2- Persons have to rid themselves of electrostatic charges by touching MOS components.
3- Hold the component by the body touching the terminals.
4- Use only grounded instruments for testing and processing purposes.
5- Remove or connect MOS ICs when operating voltage is disconnected.

X-RAY RADIATION PRECAUTION

1- Excessive high voltage can be produce potentially hazardous X-RAY radiation. To avoid such hazard, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 25KV at zero beam current (minimum brightness) under 220V AC power source. The high voltage must not under any circumstance, exceed 30KV. It is recommended the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2- The primary source of X-RAY radiation in this TV receiver is the picture tube. For continued X-RAY radiation protection, the replacement tube must be exactly the same type tube as specified in the part list.

PT CHASSIS ADJUSTMENT PROCEDURE

1- System Voltage (+B) Adjustment :

- Before switching on TV, all potentiometers should be adjusted at medium level. Then TV is switched on;
- Adjust all of the analog parameters to minimum with RC
- Adjust P1 trimpot until find +115 V on the cathode of D2 diode

2- AFT Adjustment:

- Place a balloon coil (300 Ohm dc resistance) parallel to L104
- Apply 80 dB uV 38.9 MHz (39.5 MHz for I) signal via balloon coil
- Connect a voltmeter to aft pin (pin 9) of IC301
- Adjust T101 coil until the voltage of this pin being 2.5 V dc

3- Adjustment of G2:

- Apply Philips Test pattern
- Adjust all of the analog parameters to minimum with RC
- Adjust G2 trimpot until seeing two bars on gray scale

4- Horizontal and Vertical Adjustment:

- Apply Philips Test pattern signal
- Center the picture horizontally while picture shifting to right and left with P101,
- Make vertical amplitude adjustment with P602 until seeing top and lower lines of picture will be seen
- Center the picture with P601

5- AGC Adjustment:

- Apply Philips Test Pattern whose amplitude is 60 dB uV to the rf input
- Adjust P102 until find a picture without snowy

6- Focus Adjustment:

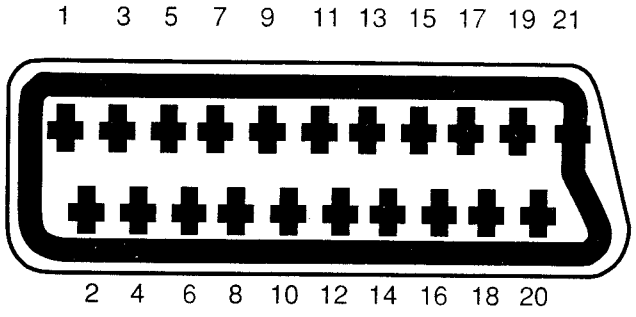
- Apply Cross-Hatch Pattern signal
- Find the optimum concentration point between H and V intersection in the middle of screen.

7- White Balance Adjustment :

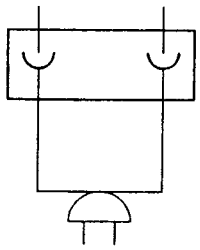
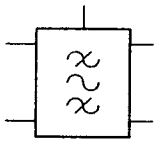
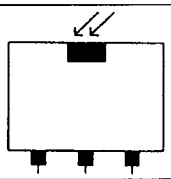
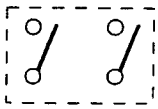
- Apply Philips Test Pattern signal
- Adjust all of the trimpots on CRT board to medium level
- Adjust color, contrast, brightness to minimum by RC
- Adjust G2
- Apply white pattern, settle in the probe of color analyzer to screen
- Increase brightness until geting Y=10 nits
- Adjust x=270 - 276 nits y=270 - 276 nits via "VR201, VR203, VR205"
- Increase brightness and contrast until Y=90 - 100 nits
- Adjust x, y to same values via "VR202 and VR204"
- Check white balance at high and low contrast level. Again make adjustment if it's necessary.

SPECIFICATIONS OF THE CONNECTOR (EURO SCART)

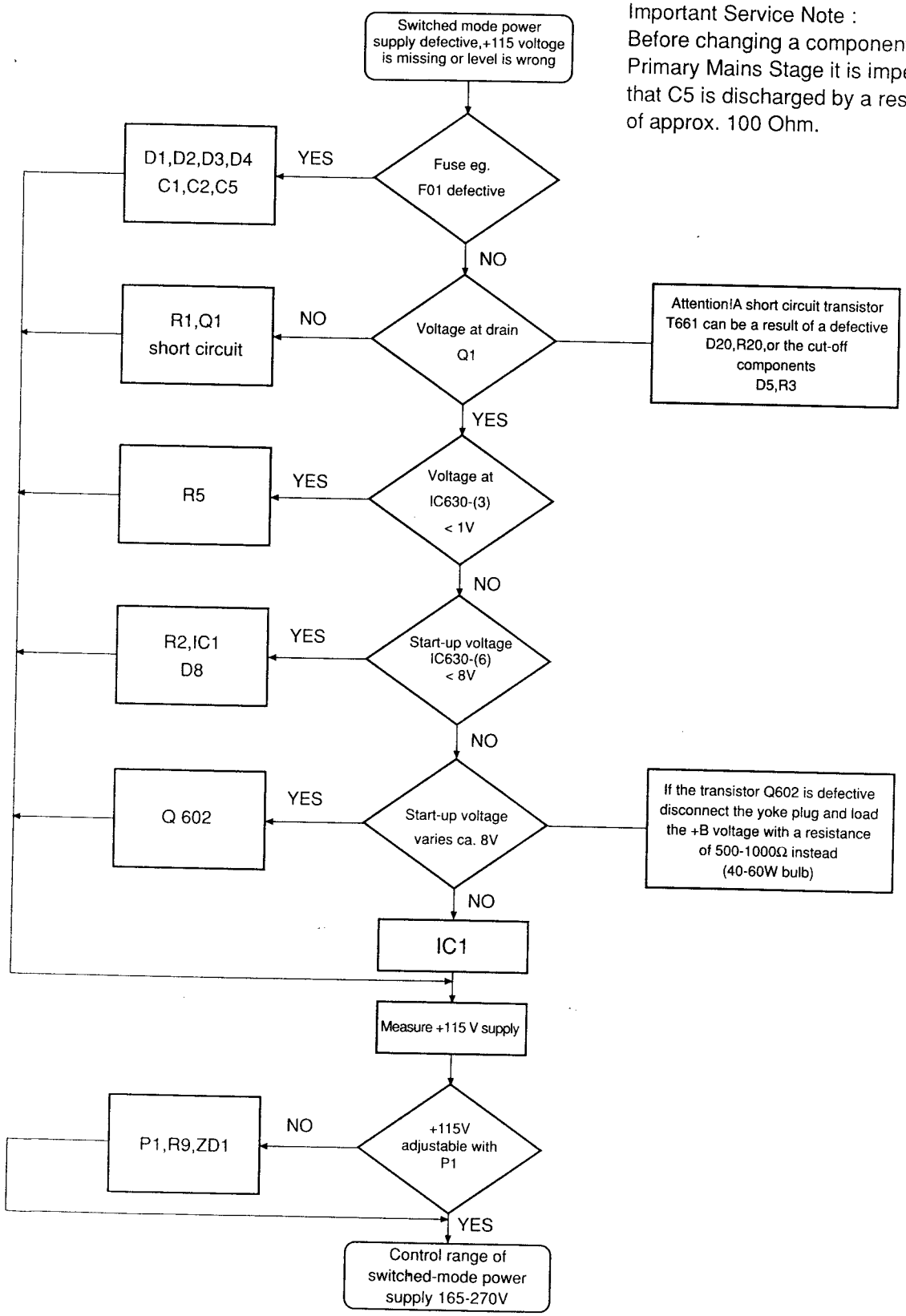
I- Audio output 1. right channel 0.5 VRMS/<l k 0
2- Audio input 1. right channel 0.5 VRMS (connected to No.6)
3- Audio output 2. left channel 0.5 VRMS (connected toNo.1)
4- GND (audio)
5- GND
6- Audio input 2. left channel 0.5 VRMS/>10k 0
7- RGB input, blue (B)
8- Switch signal video (status)
9- GND
10- Reserved for clock signals (not connected)
11- RGB input, green (G)
12- Reserved for remote control (not connected)
13- GND
14- GND switch signal RGB
15- RGB input, red (R)
16- Switch signal RGB
17- GND (video)
18- GND19- Video output 1 Vpp/75 ohm
20- Video input 1 Vpp/75 ohm
21- Shield



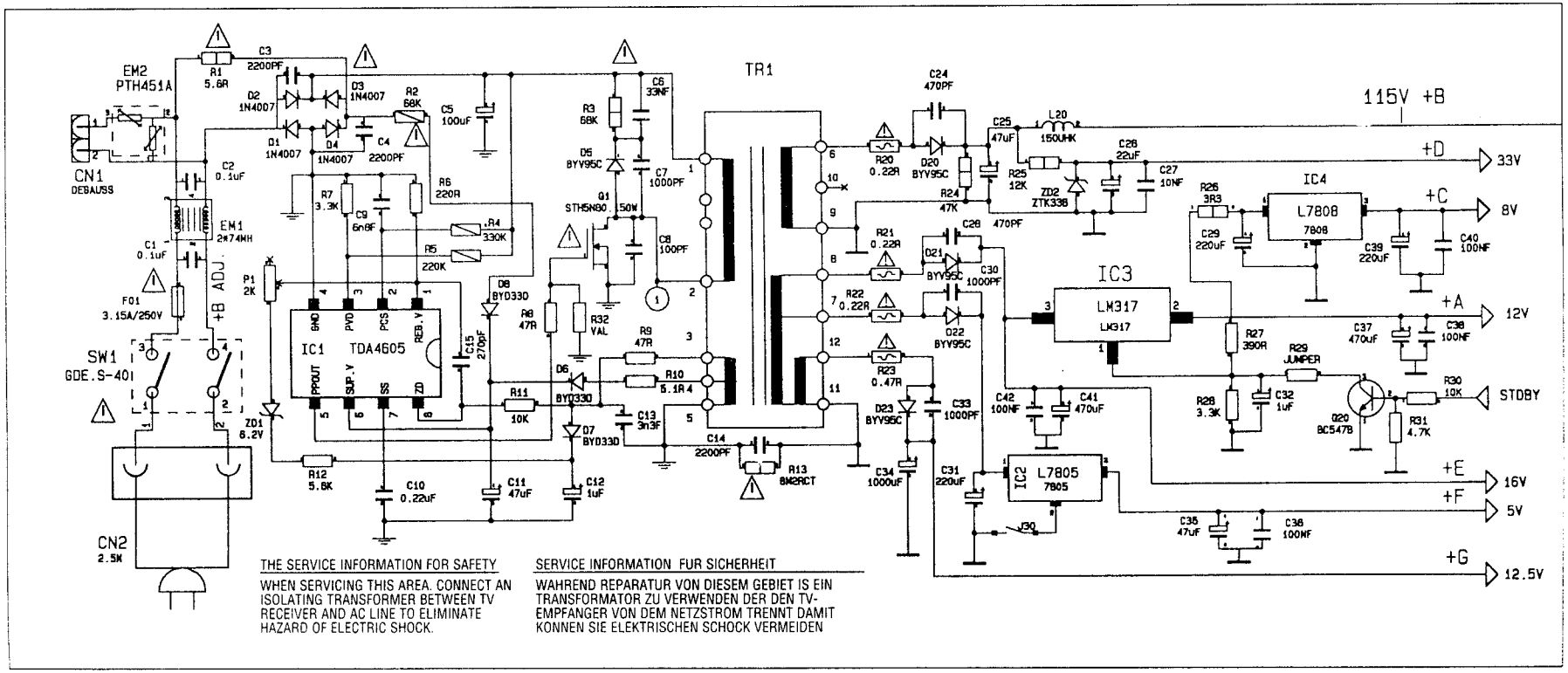
COMPONENT DESCRIPTIONS

	POWER CORD
	SAW FILTER
	IR SENSOR
	VOLTAGE REGULATOR
	ON/OFF SWITCH
	LINE FILTER
	PTC
	NPN TRANSISTOR
	PNP TRANSISTOR
	CERAMIC FILTER
	COIL
	LINEARITY COIL
	FUSIBLE RESISTOR
	IW METAL OXIDE RESISTOR
	1/2W METAL OXIDE RESISTOR
	1/4 OR 1/6W CARBON FILM RESISTOR
	CERAMIC CAPACITOR /POLYESTER CAPACITOR
	ELECTROLITIC CAPACITOR
	DIODE
	ZENER DIODE
	SWITCH JUMPER
	NET (INPUT)
	NET (OUTPUT)
	TACT SWITCH

FAULT TRACING DIAGRAM-POWER SUPPLY



Important Service Note :
Before changing a component in the Primary Mains Stage it is imperative, that C5 is discharged by a resistor of approx. 100 Ohm.

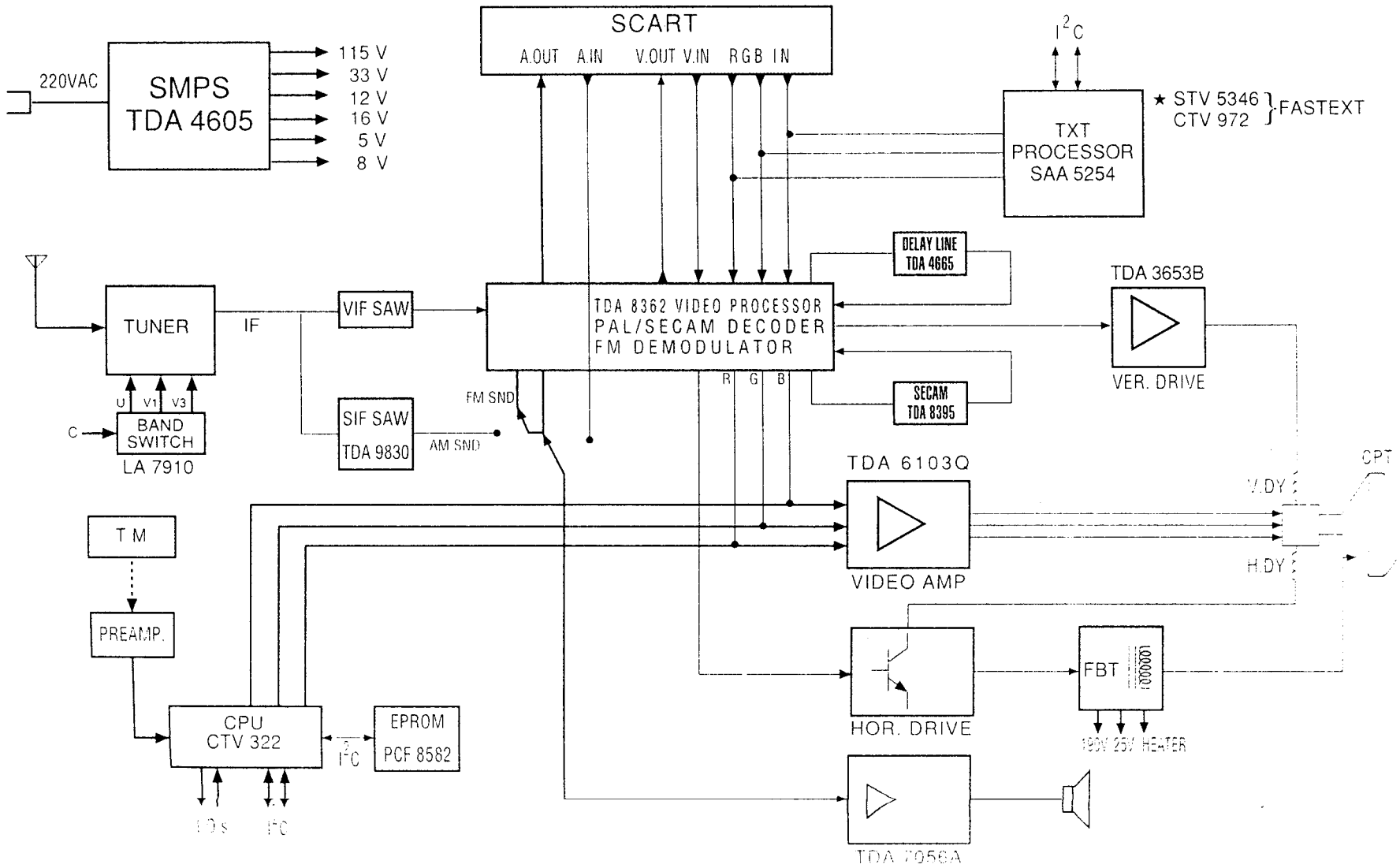


SMPS STAGE CIRCUIT DIAGRAM

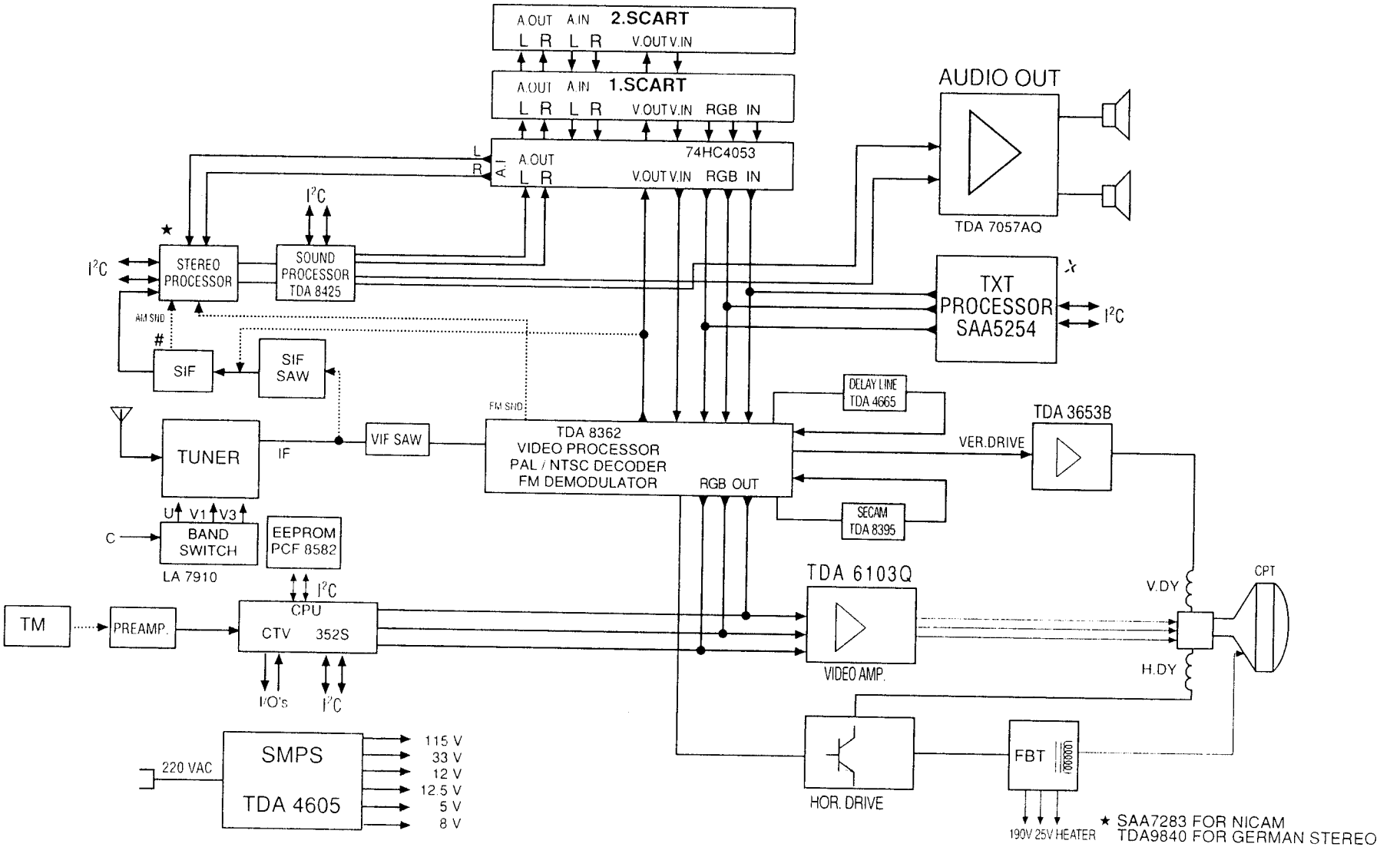
TROUBLESHOOTING GUIDE FOR MAIN PCB

TROUBLE	CHECK POINTS
No color	IC 101, EM 102, C 127, IC 102, check pin 38-SSC
No vertical deflection	Check +K, IC 601, pin 42 IC 401, pin 43 IC 401
Vertical linearity	C 625, R 623
Vertical size	C 625, R 624
Vertical shift	R 626, P 601
Horizontal linearity	L 601, C 608
Horizontal size	+B, C 607, L 602
Flue picture	IC 101 pin 25, ABL, FOCUS, HEATER, EHT
Dark picture	IC 101 pin 17, SCREEN, EHT, +M
Noise picture	EM 101, AGC, IF, FI 101
Vert./horizontal synchrony	IC 401
Interference	EM 101, IF, FI 101
No sound	Check IC 101 pin 5 and pin 50, IC 401 pin 3, pin 5, +G
Low sound	IC 101 pin 5, pin 50, IC 401 pin 5, +G, R 403
Sound distortion	IC 401, +G, R 403
Contrast	IC 301 pin 5, IC 101 pin 25, ABL
Brightness	IC 301 pin 3, IC 101 pin 17
Color saturation	IC 301 pin 4, IC 101 pin 26
Tuning	IC 301 pin 1, Q 301, +D, EM 101
Memory	IC 302, IC 301, SDA, SCL
Band select	IC 301 pin 7/8, IC 303, +K, EM 101
No video-out on the SCART	Check TV-VID signals, Q 651
No video-in on the SCART	Check IC 301 pin 12, IC 101 pin 16 on AV mode, check the video signals on AV mode SCART pin 20 and IC 101 pin 15
No sound out on the SCART	IC 101 pin 1, Q 653 , Q654
No sound in on the SCART	Check the audio signals on SCART pin 2/6 and IC 101 pin 6
No remote control reception	Check signals on pin 3 EM 302 and IC 301 pin 35

PT CHASSIS BLOCK DIAGRAM (MONO)



PT CHASSIS BLOCK DIAGRAM (STEREO)



MONITOR VIEW

Exp. View No: Description

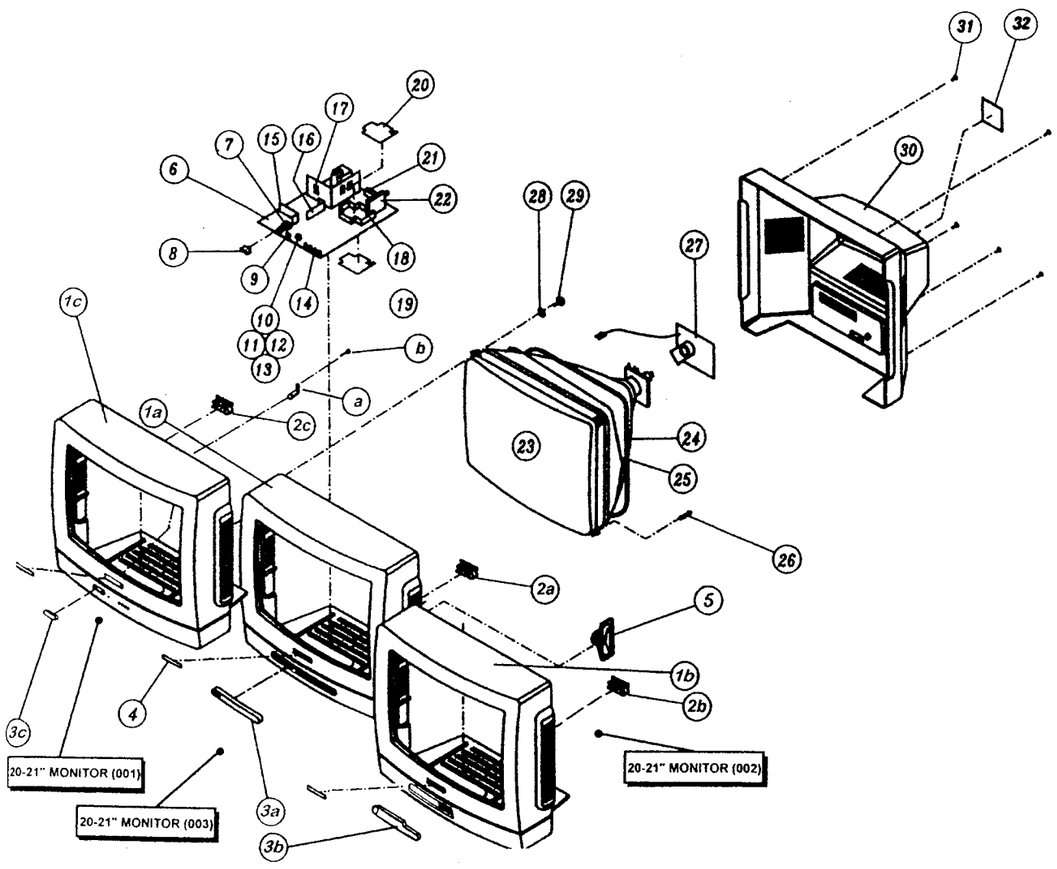
1a Front Cabinet (003 View)
1b Front Cabinet (002 View)
1c Front Cabinet (001 View)

2a Multiple Button (003 View)
2b Multiple Button (002 View)
2c Multiple Button (001 View)

3a Acyrilic Window (003 View)
3b Acyrilic Window (002 View)
3c Acyrilic Window (001 View)

4 Logo
5 Speaker
6 Main Board Assy
7 Power Switch GDE
8 On/Off Button
9 Preamplifier
10 Led PCB Holder
11 Led PCB
12 Led Holder
13 Led
14 Tact Switch
15 Heatsink Block PT2
16 Heatsink Block PT3
17 Heatsink Block PT1
18 IF Shield
19 IF Bottom Cover
20 IF Top Cover
21 Scart Socket
22 Tuner
23 Picture Tube
24 Degaussing Coil
25 Mass Wire
26 Spring
27 CRT PCB Assy
28 Washer
29 CRT Screw 5x30
30 Back Cover
31 Screw 3.9x19
32 Back Cover Label
a Lens
b Screw 2.9x9.5

✳ Please don't forget writing your Model Name completely, whenever you order spare parts given above !



BISONIC VIEW

Exp. View No: Description

1a Front Cabinet (002 View)
1b Front Cabinet (001 View)
1c Front Cabinet (003 View)

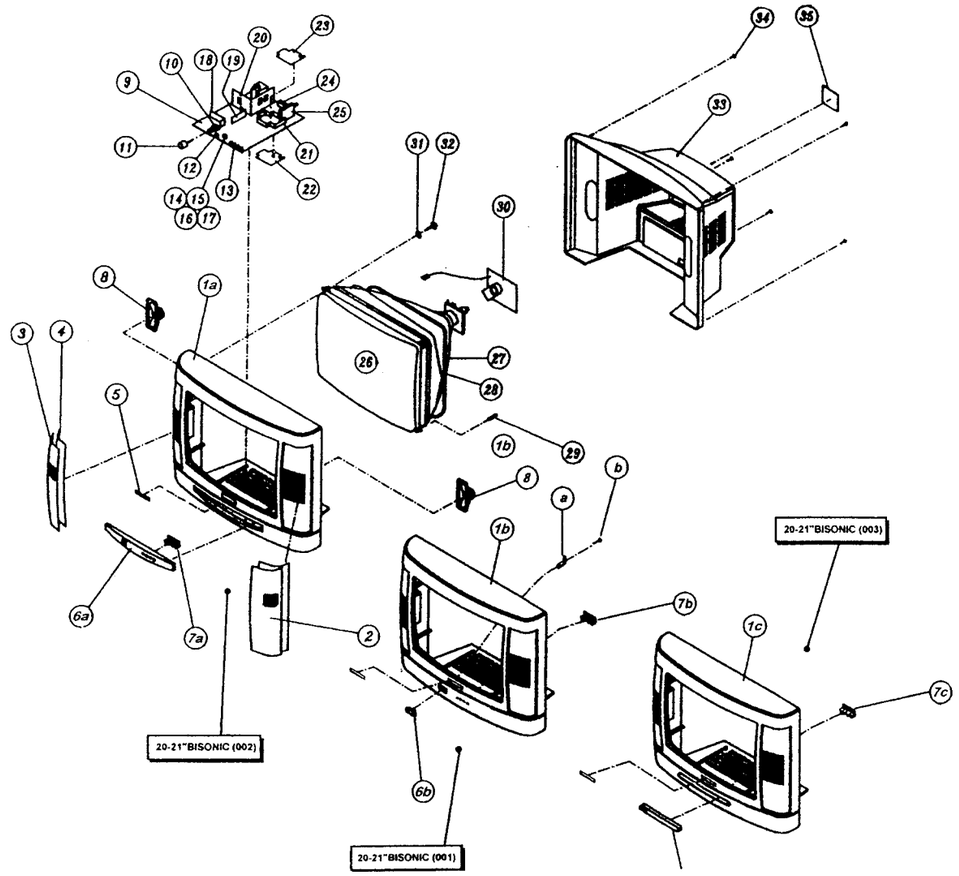
2 Speaker Grill (Right)
3 Speaker Grill (Left)
4 Speaker Felt
5 Logo

6a Acyrilic Window (002 View)
6b Acyrilic Window (001 View)
6c Acyrilic Window (003 View)

7a Multiple Button (002 View)
7b Multiple Button (001 View)
8c Multiple Button (003 View)

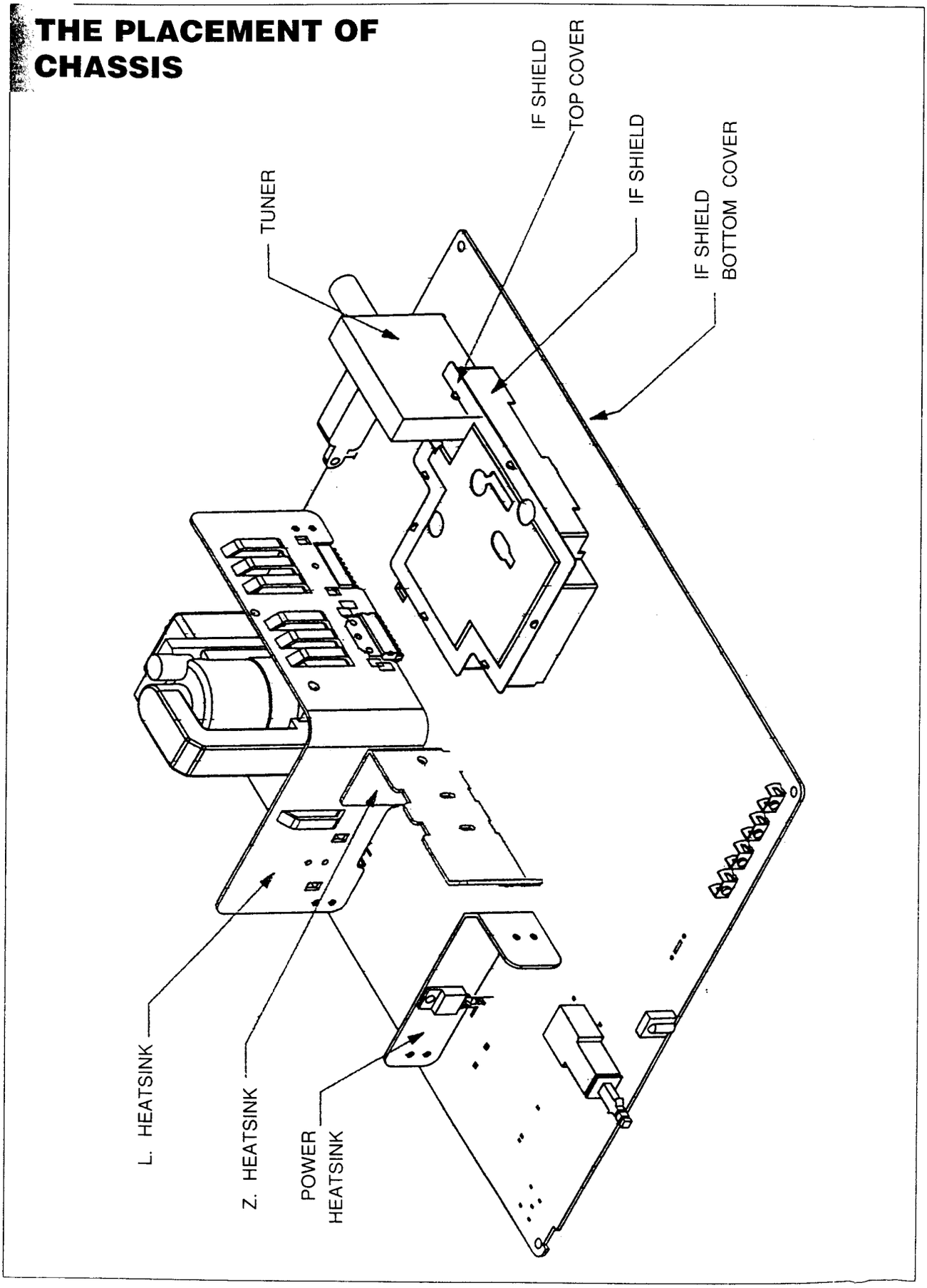
8 Speaker
9 Main Board Assy
10 Power Switch GDE
11 On/Off Button
12 Preamplifier
13 Tact Switch
14 Led PCB Holder
15 Led PCB
16 Led Holder
17 Led
18 Heatsink Block PT2
19 Heatsink Block PT3
20 Heatsink Block PT1
21 IF Shield
22 IF Bottom Cover
23 IF Top Cover
24 Scart Socket
25 Tuner
26 Picture Tube
27 Degaussing Coil
28 Mass Wire
29 Spring
30 CRT PCB Assy
31 Washer
32 CRT Screw 5x30
33 Back Cover
34 Screw 3.9x19
35 Back Cover Label
a Lens
b Screw 2.9x9.5

* Please don't forget writing your Model Name completely, whenever you order spare parts given above !



EXPLODED VIEW

THE PLACEMENT OF CHASSIS



DESCRIPTONS OF THE PARTS

1- SWITCH MODE POWER SUPPLY STAGE

In order to supply the DC voltage required at various parts of the chassis, a SMPS transformer controlled by the IC TDA 4605 and switching transistor 3N90 is used. Cl, EM1, C2 filter circuit prevents the network noises and the effects of high frequency which produced in TV set. After rectifying DC voltage is filtered by using C5. The stat up voltage of TDA4605 is obtained from R2 at the same time a square wave ii produced from pin 5 of IC TDA4605. This square wave reaches Ql passing through R8. After that Q1 form and induction on TR1, which produces a voltage on pin 6. This voltage rectified by D6 is used as a supply voltage of IC 1. IC 1 does not operates SMPS by stopping pulses at pin 5, when the network is higher or lower than fixed limits. Pin 2 is control pin of overload. This stage produces 115V for FBT, 12V for audio part, 33 V for tuning circuit 5V, 12V (tuner and some ICs) and 8V (for TDA8362) are produce by the means of the regulators LM7805, LM317 and LM7808. This circuit operates between 165 VAC and 250VAC (5OHz).

2- MICROCONTROLLER STAGE

Below items are controlled or generated by means of these controllers.

- CTV 322S V2.0 (for mono models) and CTV 352S V1.4 (for stereo models) are used as controller on PT chassis.
- Voltage synthesis tuning
- On screen display
- Control of two transmission standard
- Controls of the simple text or fastext decoder
- Full peri-TV (scart) switching and double scart switching on stereo models,
- Controls of stereo decoder TDA 9840 as German Stereo Decoder
- SAA 7283 as Nicam decoder
- Sound processing (Bass, treble, balance)
- Controls of the analog values of the picture (Brightness, Color, Contrast)

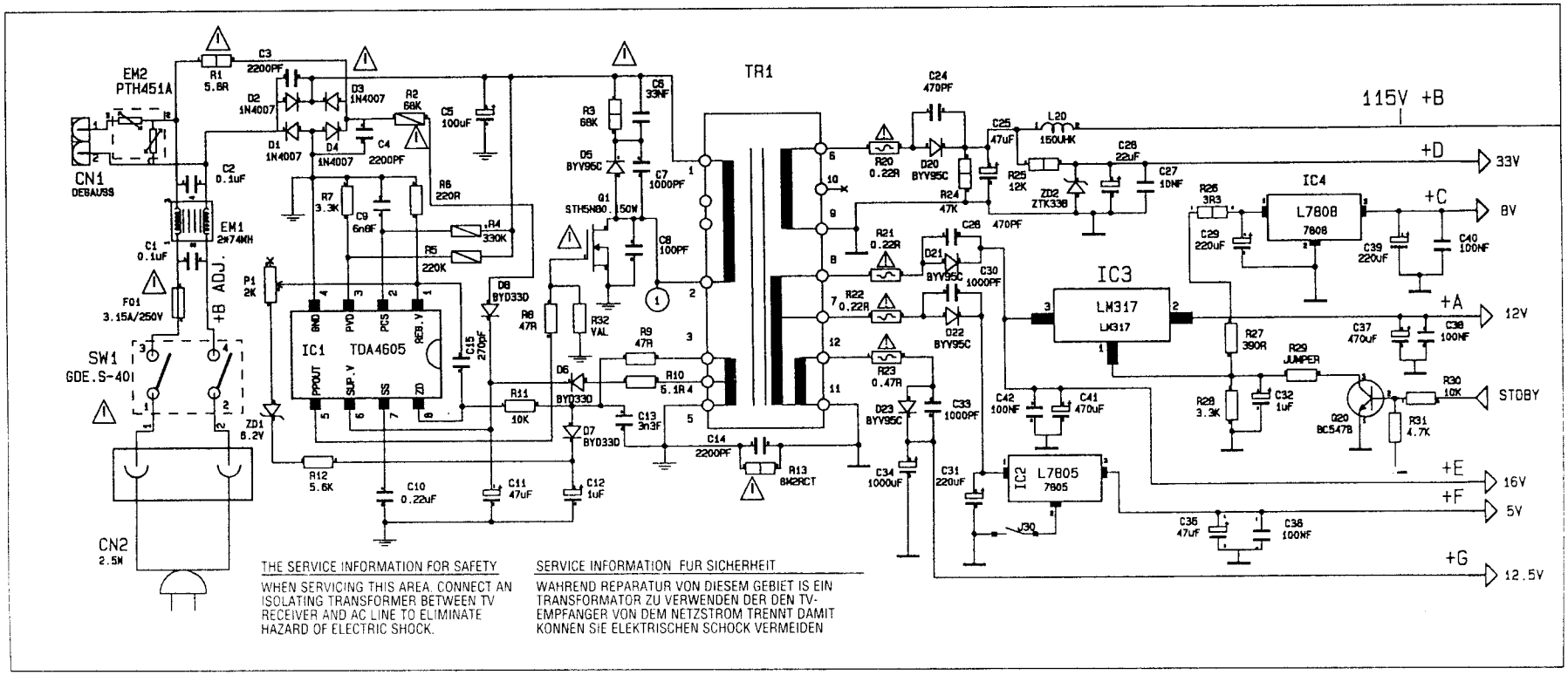
3- ANALOG OPERATION PART WITH TDA 8362

TDA8362 is a single-chip TV processor which contains nearly all small signal functions that are required for color television receiver. Fora complete receiver the following circuits need to be added a base-band delay line (TDA4665) a tuner and output stages for audio, video and horizontal and vertical deflection. TDA8362 can handle signals with positive modulation and it supplies the signals which are required for secam decoder TDA8395.

VIDEO IF AMPLIFIER

The IF amplifier contains 3 AC-coupled control stages with a total gain control range of greater than 60 dB.The reference carrier for the video demodulator is obtained by means of passive regeneration of the picture carrier. The external reference tuned circuit is the only remaining adjustment of the IC.

In the TDA8362 the polarity of the demodulator can be switched so that the circuit is suitable for both positive and negative modulated signals. The AFC circuit is driven with the same reference signal as the video demodulator. To ensure that the video content does not disturb the AFC operation a sample and hold circuit incorporated; the capacitor for this function is internal. the AFC output voltages 6V. The AGC detector operates on levels, top sync for negative modulated and top white for positive modulated signals . The AGC detector time constant capacitor is connected externally.



SMPS STAGE CIRCUIT DIAGRAM

SOUND IF CIRCUIT

On mono models;

The sound bandpass and trap filters have to be connected externally. The filtered intercarrier signal is fed to a limiter circuit and is demodulated by means of PLL demodulator. The PLL circuit tunes itself automatically to the incoming signal, consequently, no adjustment is required.

The volume is DC controlled. The composite audio output signal has an amplitude of 700 mV RMS at a volume control setting of -6 dB. The de-emphasis capacitor has to be connected externally. The non-controlled audio signal can be obtained from pin 1 via a buffer stage. The amplitude of this signal is 350 mV RMS.

The TDA8362 external audio input signal must have an amplitude of 350 mV RMS. The audio/video switch is controlled via the chrominance input pin.

On stereo models;

On stereo models, the adjustable sound output pin (pin50) is used for mono sound. An external sound IF circuit TDA3845 is used for NICAM B/G, I stereo systems. For NICAM L stereo system, TDA4470B Sound IF IC is used so that obtain AM sound and NICAM I sound carrier. On German Stereo system, TBA120U is used as FM demodulator for second sound carrier.

SYNCHRONIZATION CIRCUIT

The sync separator is preceded by a voltage controlled amplifier which adjusts the sync pulse amplitude to a fix level. The sync pulses are then fed to the slicing stage (separator) which operates at 50 % of the amplitude.

The separated sync pulses are fed to the first phase detector and to the coincidence detector. The coincidence detector is used for transmitter identification and to detect whether the line oscillator is synchronized. When the circuit is not synchronized, the voltage on the peaking control pin (pin 14) is LOW so that this condition can be detected externally

The IC TDA8362 contains a start up circuit for the horizontal oscillator. When this feature is required a current of 6.5 mA has to be supplied to pin 36.

COLOR DECODING

TDA8362 contains PAL and NTSC decoder (TDA8361 contains only PAL decoder) but it can cooperate with the secam add-on secam decoder TDA8395. The communication between two IC's is achieved via pin 32. The TDA8362 supplies the reference signal (4.43 MHz) for the calibration system of the TDA8395, identification of the color standard is via the same connection. When a SECAM signal is detected by the TDA8395 the IC will draw a current of 150 uA. When TDA8362 has not identified a color signal in this condition it will go into the SECAM mode, that means it will switch of the

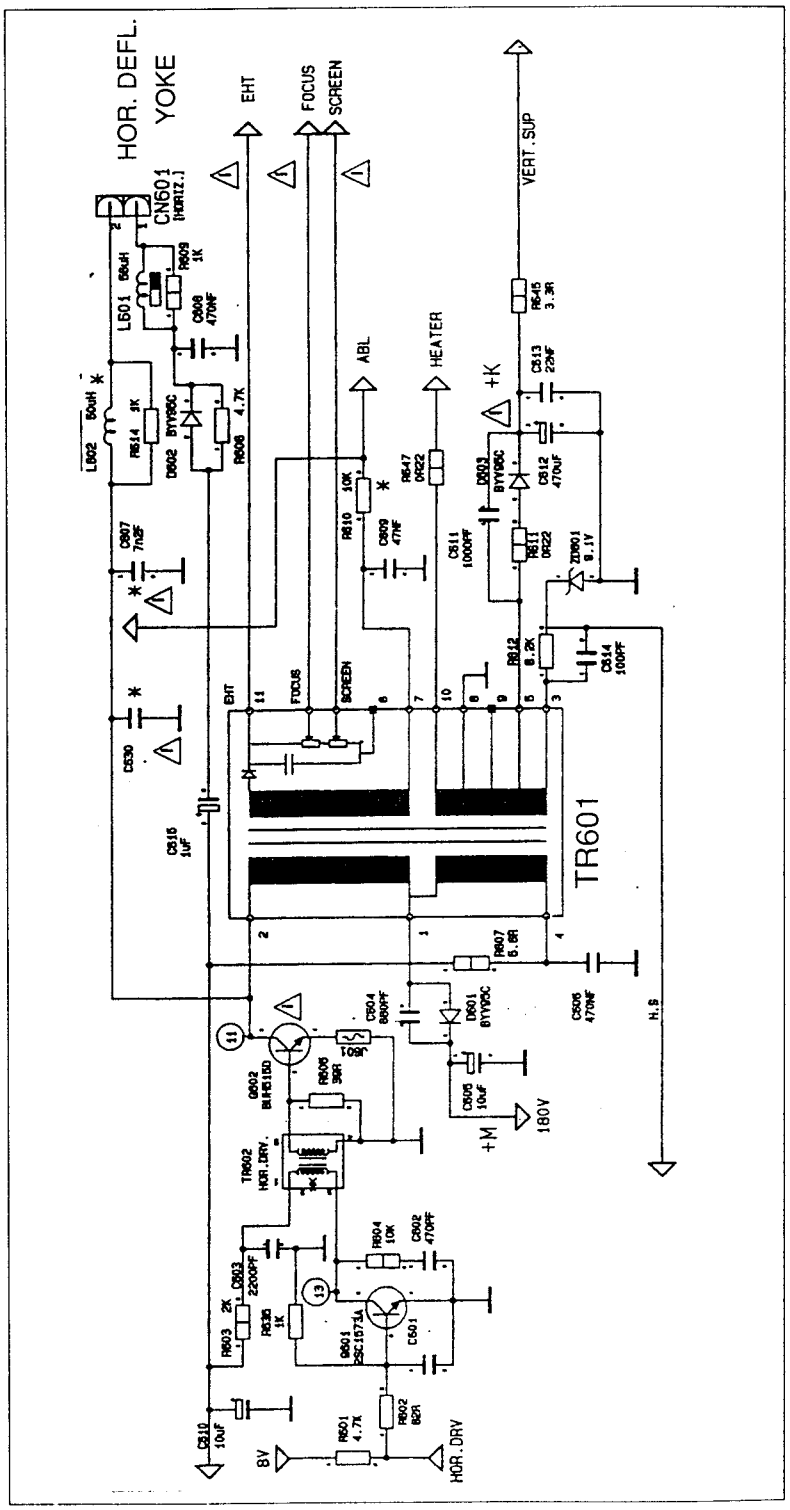
R-Y and B-Y outputs and increase voltage level on pin 32.

4- VERTICAL DEFLECTION CIRCUIT WITH TDA3653B

The TDA3653B is vertical deflection circuit for drive of various deflection systems with currents up to 1.5 A peak to peak. Pin 5 is the output pin. the supply for the output stage is fed to pin 6 and the output stage ground is connected to pin 4. Pin 1 is the input for the driver of the output stage . The signal at pin 1 is also applied via external resistors to pin 3 which is the input of the switching circuit. When the flyback starts, this switching circuit rapidly turns off the lower output stage and so limits the turn-off dissipation. It should be noted that the lowest voltage at pin 8 is > 2.5 V, during normal operation.

5- HORIZONTAL DRIVE CIRCUIT

The horizontal drive pulses obtained from pin 37 of the TDA8362 are connected to base of Q601(2SC1573) via R602 . Q601 drives Q602 (BUH515D) via the drive transformer TR602. TR601 is the EHT transformer. + B (115 V) is switched by Q602 and TR601 generates both "EHT, FOCUS, G2 voltages required for CPT" and "170 V, Heater voltage and 26 V vertical supply voltage". The anode beam current information from pin 7 of TR601 is used for reducing contrast at too high beam currents, in order to stabilize the voltages derived from power supply.



HORIZONTAL DRIVE PART CIRCUIT DIAGRAM

6- SOUND OUTPUT STAGE

On mono models, TDA7056A is used as sound output amplifier with DC volume control. Pin 50 of the TDA8362 is AC coupled to the input pin 3 of the TDA7056A via a RC filter. It is supplied by + 12V coming from a separate winding in the SMPS transformer.

On stereo models, TDA7057AQ is used as sound amplifier. The sound level is controlled by sound processor TDA8425 via I2C bus on stereo boards. The outputs of TDA8425 (pin 9 and pin 13) is connected to TDA7057AQ via a divider circuit and two capacitors.

7- TELETEXT STAGE

The teletext stage consists of IC SAA5254. On this stage, it should be paid attention that there is video signal on pin 8 of IC SAA5254 after a RCL filter, on condition that existence of the other requirements such as +5V, periferical components.

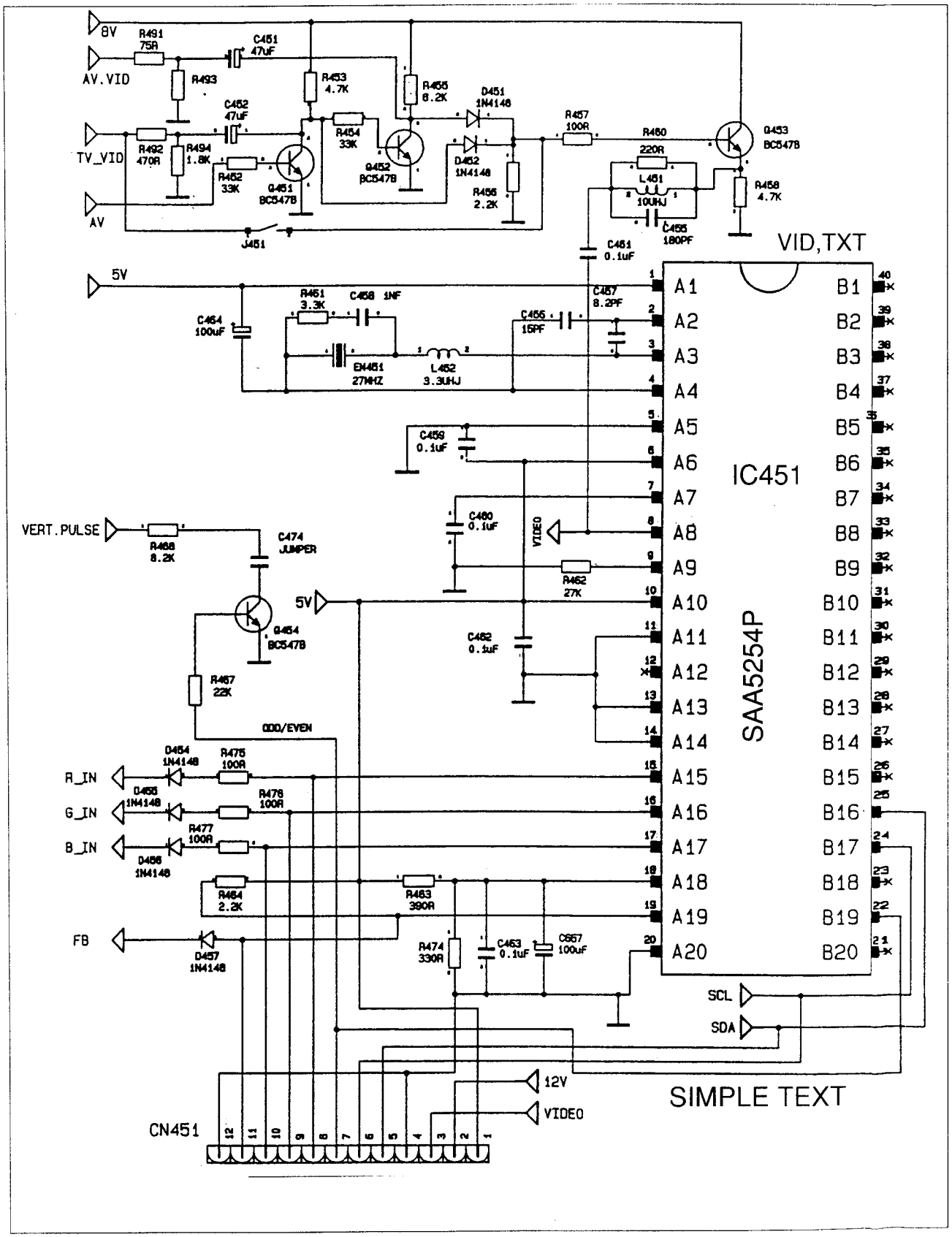
Basically, fastext stage consists two IC's, STV5346 Teletext decoder and CTV 974 fastext controller with I^2C bus interface. For List Mode a 2K EEPROM (PCF8582) can be added.

8- CRT STAGE

The TDA6103Q is used on CRT stage as video output amplifier. The TDA6103Q consists of three monolithic video output amplifiers. Each amplifier can be seen as an operational amplifier with negative feedback. The advantage of negative feedback is that the amplifier characteristics do not play an important role up to certain frequencies.

The device needs only one power supply voltage (+M). In contrast to previous types of DMOS video amplifiers, the TDA 6103Q does not need a second supply voltage (12V.), so it saves one wire from motherboard to CRT stage.

As the TDA 8362 has no white point adjustment and no black current set-up, two adjustments are required for gain and three adjustments for black setting.



SIMPLE TEXT PART CIRCUIT DIAGRAM

THE DETAILS OF THE BOARDS

Mother Board Contains

- TDA 8362 multistandard TV processor
- CTV 322 / CTV 352 S micro controller with OSD
- TDA 4605 Switch Mode Power Supply Controller
- TDA 4665 Baseband Delay Line
- TDA 8395 Secam Decoder
- TDA 7056A Audio Output Amplifier (for mono)
  TDA 7057AQ Audio Output Amplifier (for stereo)
- PCF 8582 2K EEPROM
- TDA 3653B Vertical Driver
- SAA 5254 Simple Text Processor
- LA 7910 Band Switch IC
- TDA 9830 AM Demodulator
- LM 317 Voltage Regulator
  LM 7805 Voltage Regulator
  LM 7808 Voltage Regulator
- TECC 2989VA15B VST Tuner
- Infrared Receiver
- Horizontal Deflection Part
- Degaussing Circuit
- 4 push buttons (p+, p-, v+, v-)
- Stand By Led
- Main Switch
- Scart Jack
- Extension Connectors

CRT Board

- TDA 6103Q Video Output Amplifier

Extension Boards

Nicam L Board

- SAA 7283 QPSK Demodulator, Nicam Decoder
- TDA 4470 B SIF and AM Demodulator
- TDA 8425 Sound Processor

Nicam BG, I Board

- SAA 7283 QPSK Demodulator , Nicam Decoder
- TDA 3845 SIF
- TDA 8425 Sound Processor

German Stereo Board

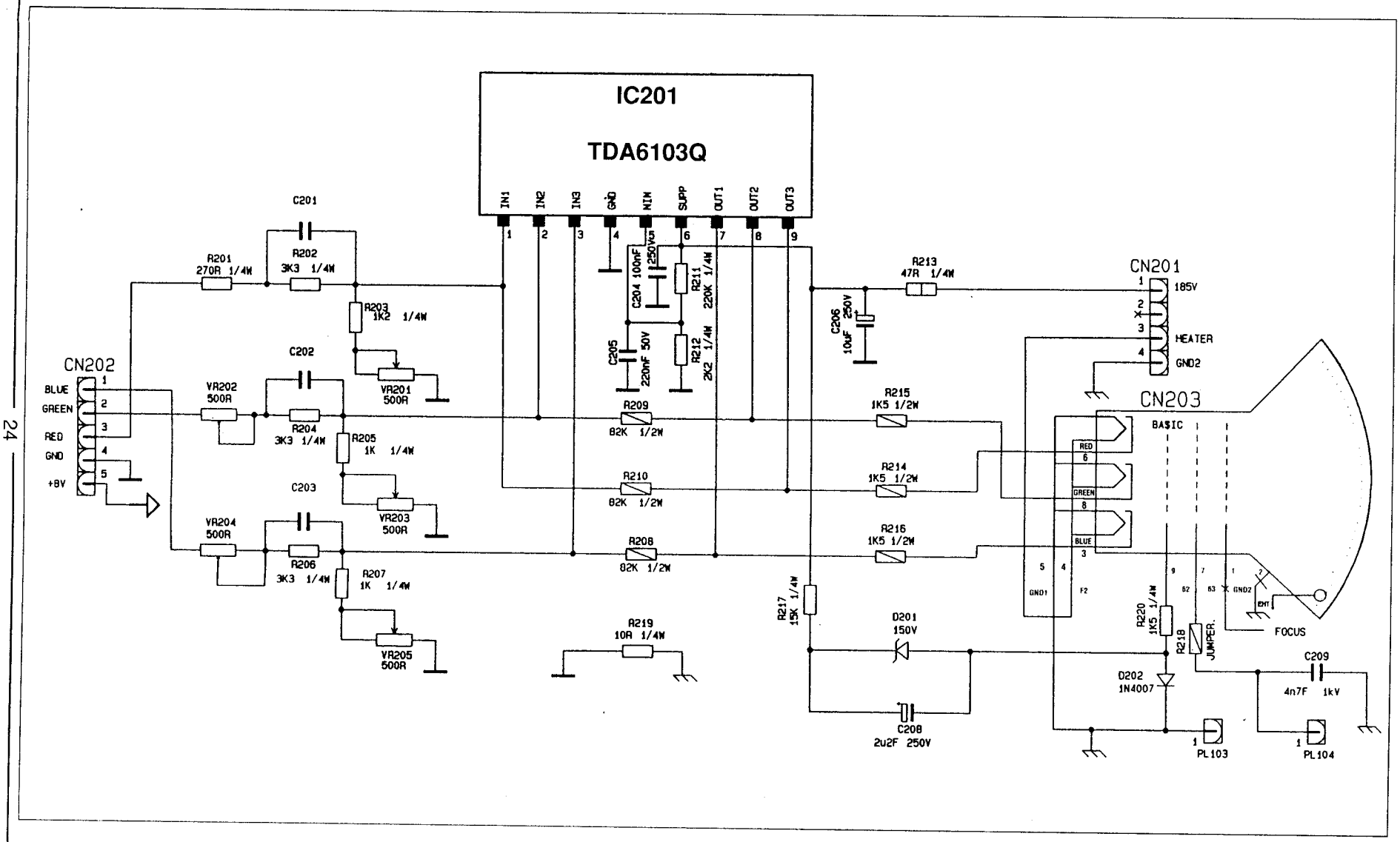
- TDA 9840 Stereo Processor
- TBA 120U SIF
- TDA 8425 Sound Processor

Fastext Board

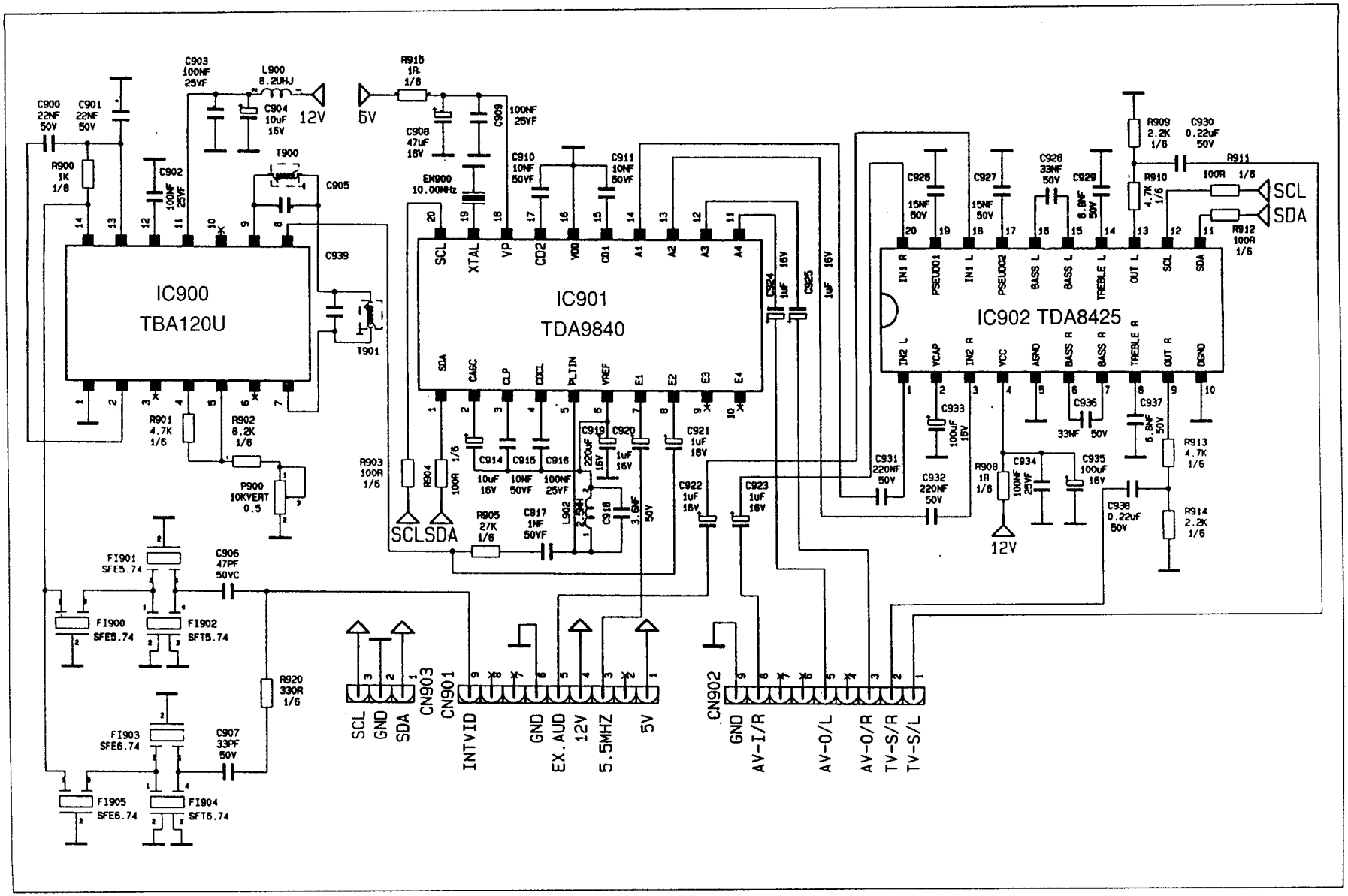
- STV5346 Teletext Processor
- CTV972 Fastext Processor
- PCF8582 2K EEPROM

Double Scart Board

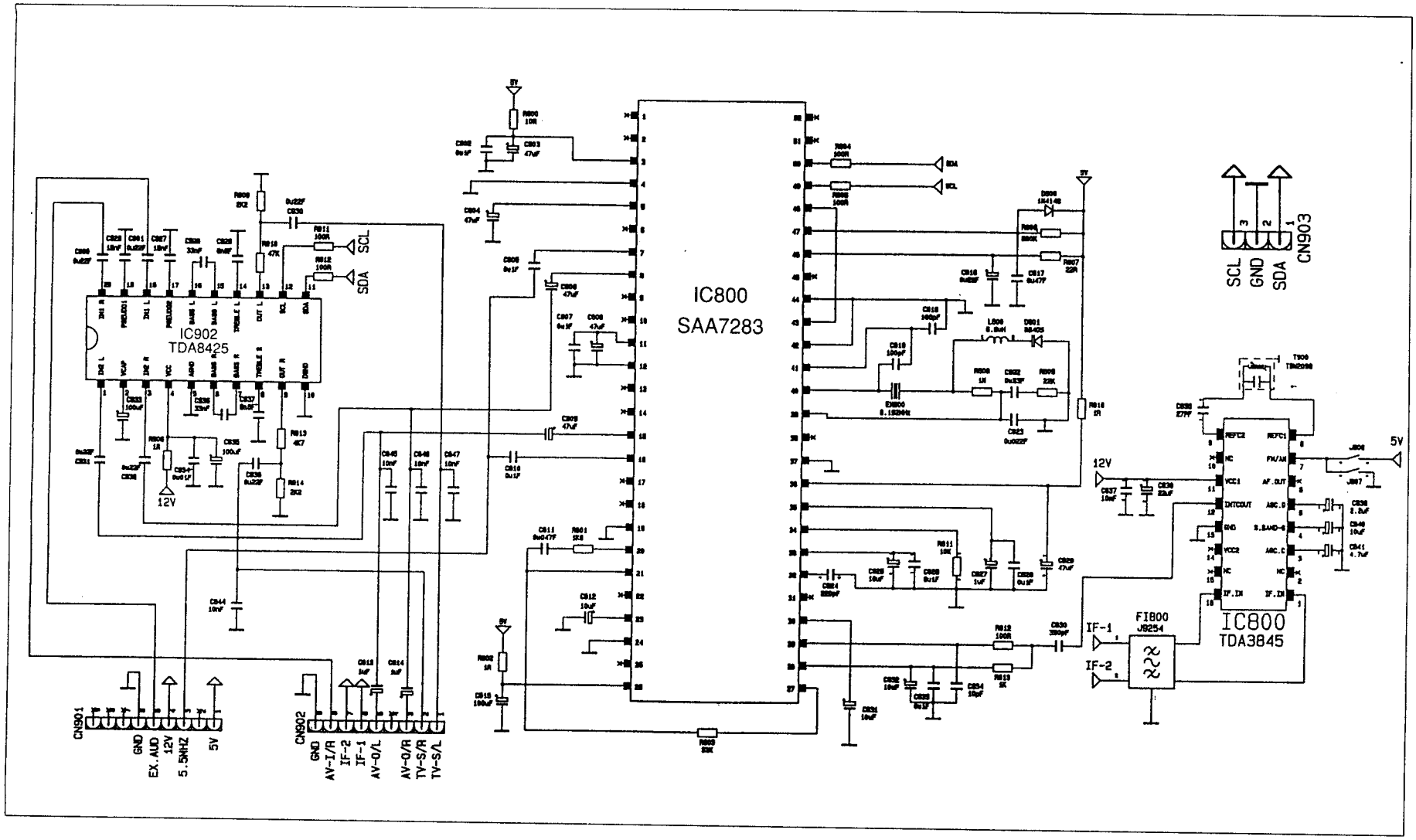
- 74HC4053 DEMUX



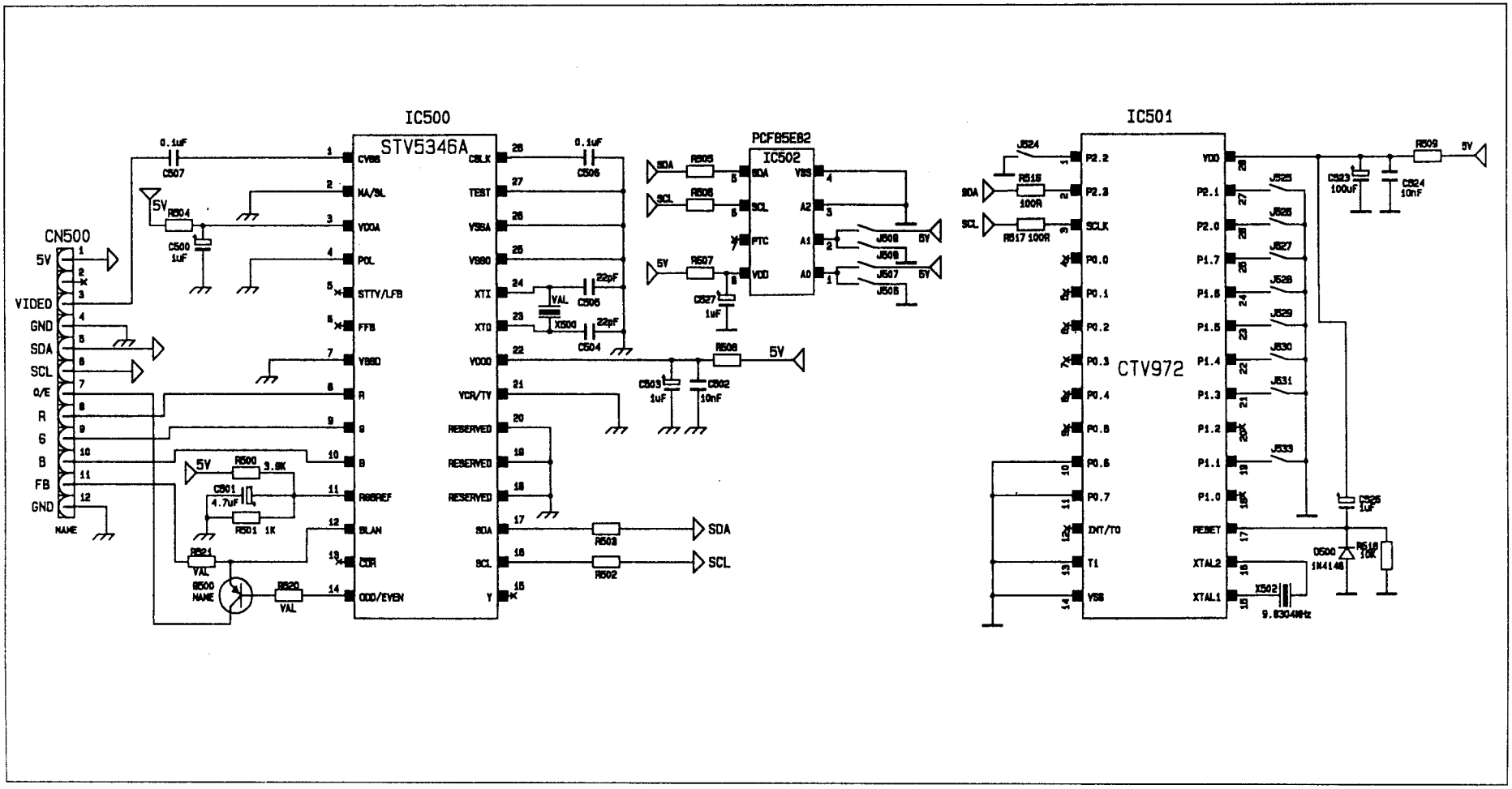
CPT BOARD CIRCUIT DIAGRAM



GERMAN STEREO BOARD CIRCUIT DIAGRAM

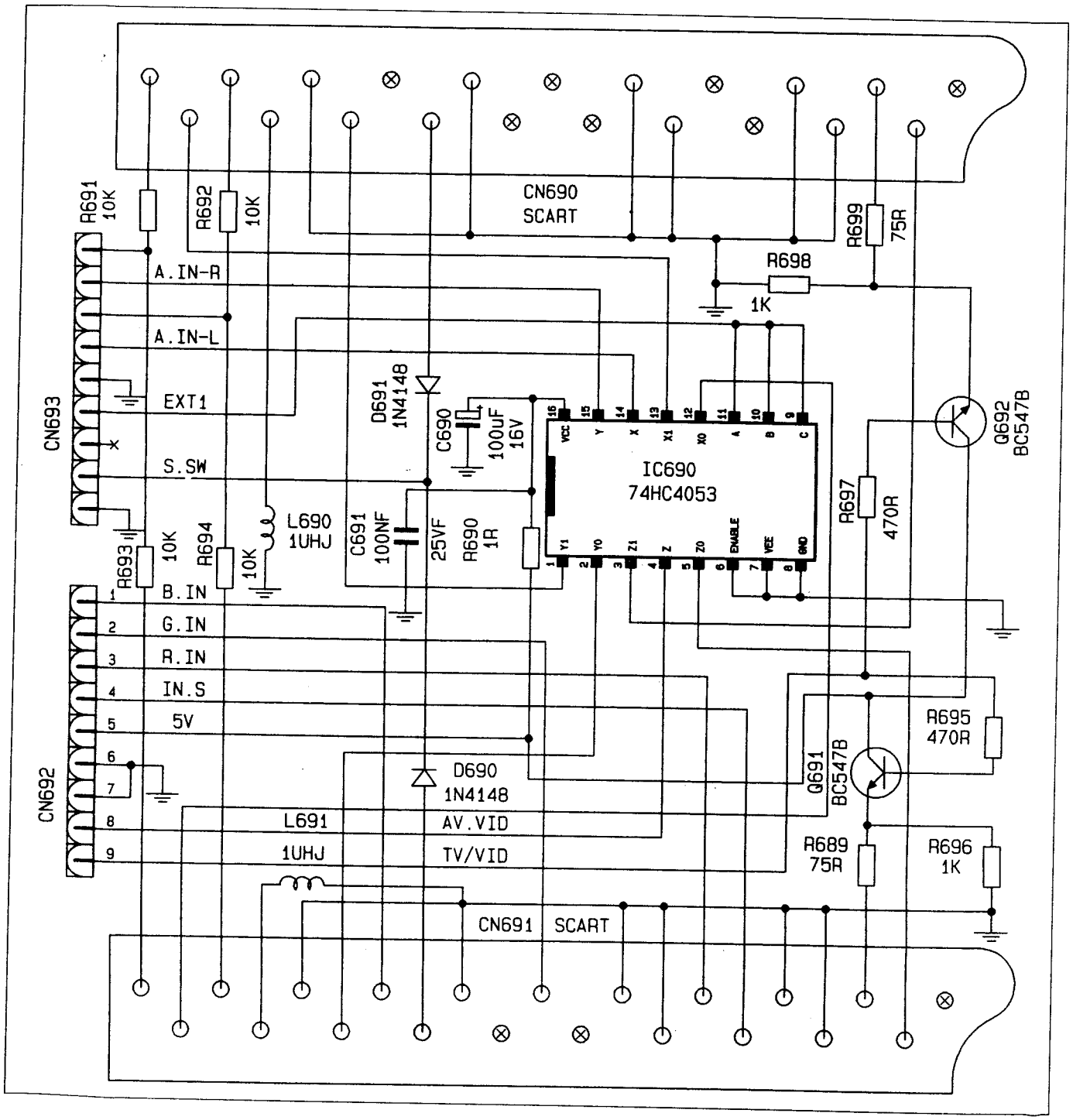


NICAM BOARD CIRCUIT DIAGRAM



FASTEXT BOARD CIRCUIT DIAGRAM

DOUBLE SCART BOARD CIRCUIT DIAGRAM



MAIN CHARACTERISTICS

- Tube : 90° narrov neckCPT
- Chassis : Push through chassis for keyboard
- Color And Sound System : European Standards B, G, I, L, L' and DK with automatic PAL, SECAM Decoding
- Power Source : AC 175V - 250V
- Power Consumption : 70W (stereo), 60W (mono)
- Stand-By Power Consumption : 12 W
- Channel Coverage : VHF (2-4, 5-12) UHF (21-69) CATV (S1-S41)
- Number of Programs : 70 (stereo), 90 (mono)
- Audio Outputs : 2*4 Watts (stereo), 4 Watts (mono) at 10% THD
- Speakers : 2*8 Ohm (stereo), 8 Ohm (mono)
- Antenna Input : 75 Ohm IEC

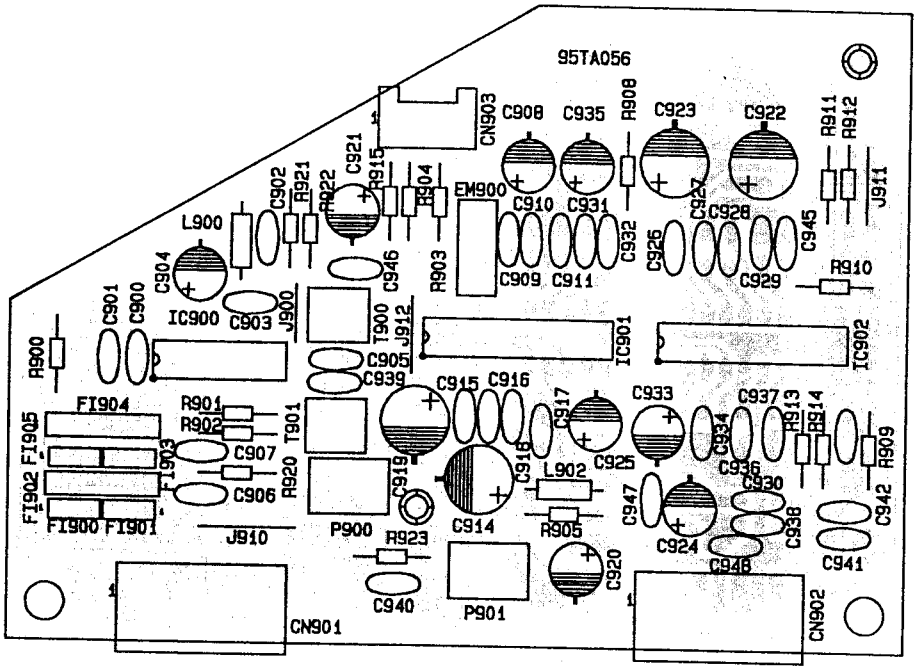
Standard Features

- Auto search
- Personal Preference
- Auto Shut-off
- Scart with RGB
- Swap function
- Store function on RC
- On - Screen Display
- Fine tunning
- Prog ±, Vol ± control buttons on the set
- Sleep timer
- RC Hand Unit: TM45L type

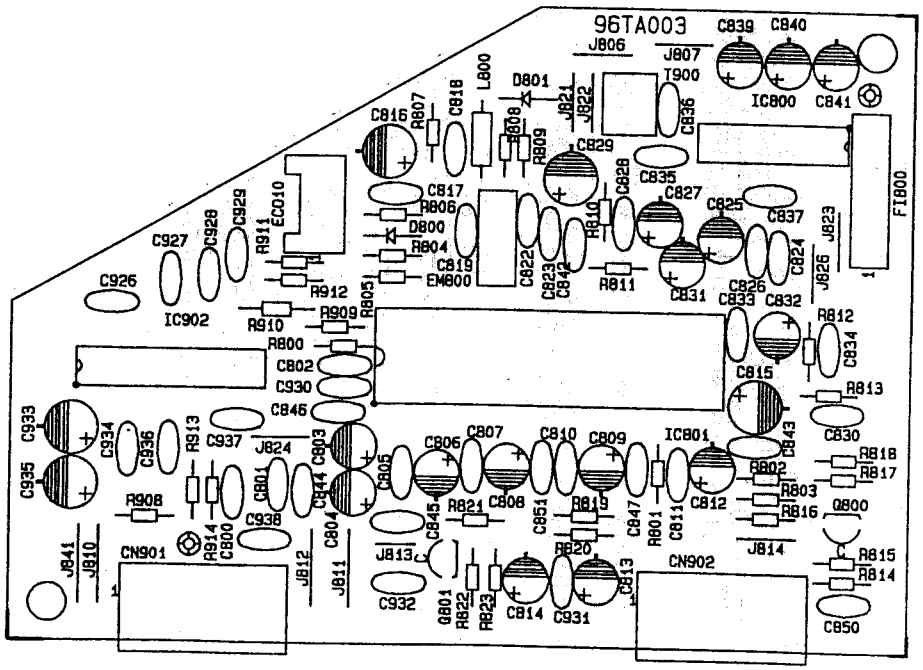
Optional Features

- Fastext
- Simple Text
- German Stereo
- Nicam B/G, I, L
- Double Scart

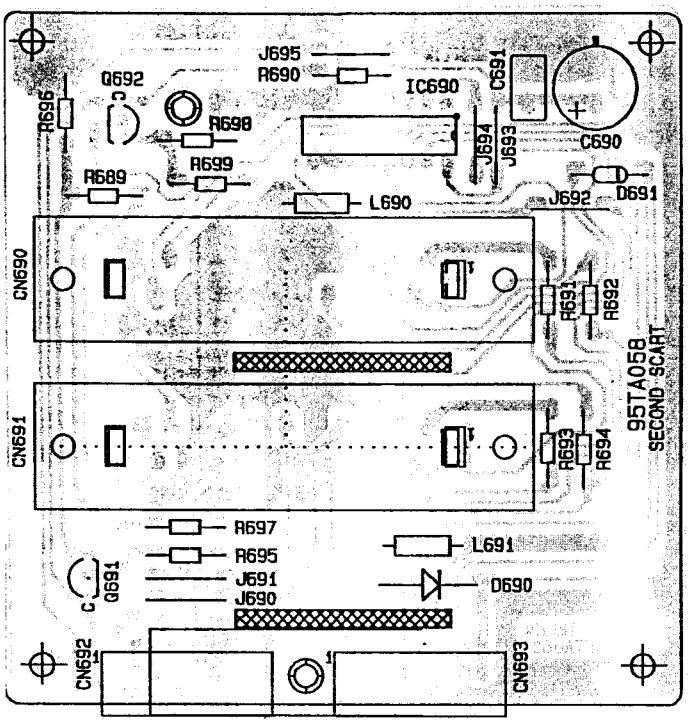
THE BOARD LAYOUTS



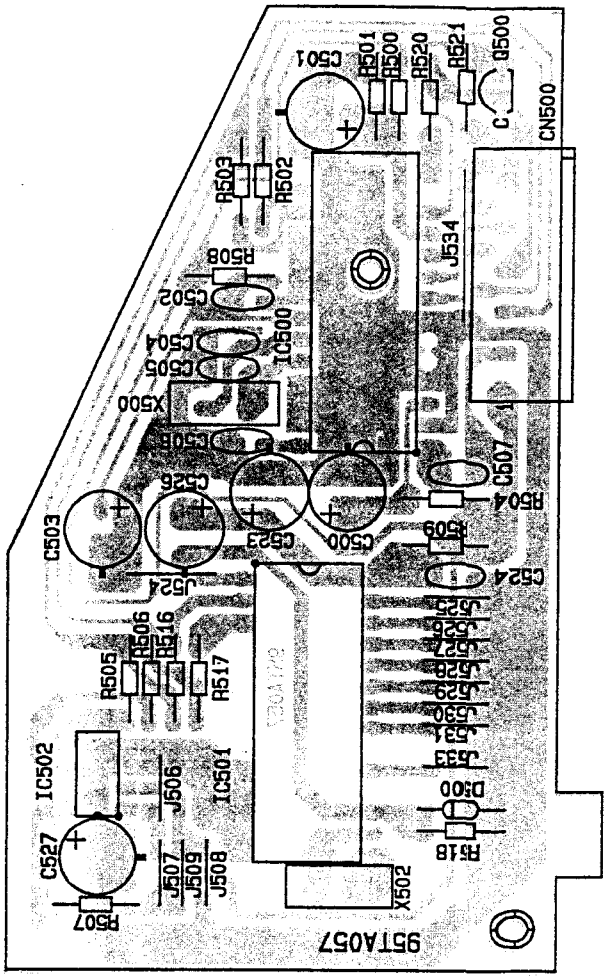
GERMAN STEREO BOARD



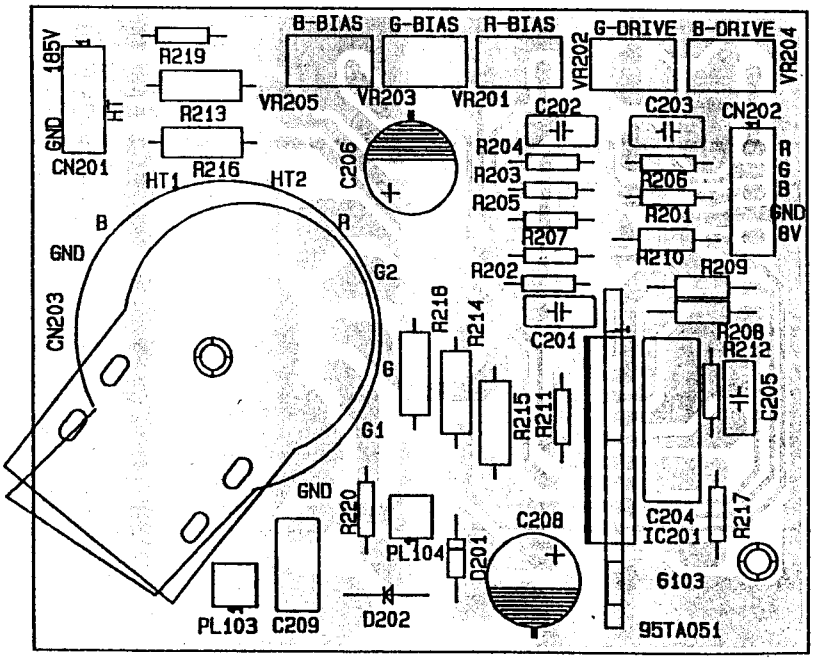
NICAM BOARD



DOUBLE SCART BOARD



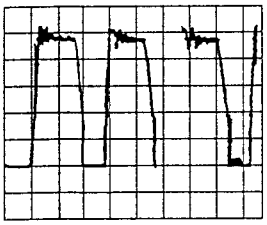
FASTEXT BOARD



CPT BOARD

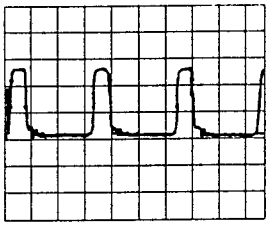
OSCILLOSCOPE SHAPES

1) 5usn/div 100 volt/div



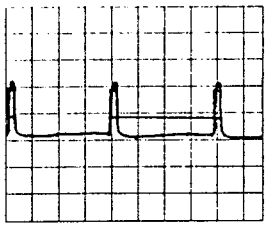
Drain of Q1

2) 20 usn/div 2 volt/div



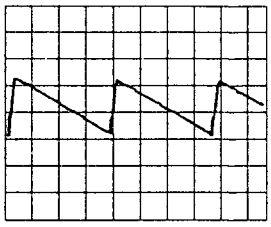
IC 301 pin 26

3) 5 msn/div 2 volt/div



IC 301 pin 27

4) 5 msn/div 0.5 volt/div

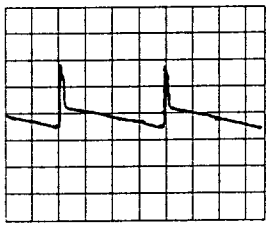


IC 101 pin 41

5) 5msn/div 1 volt/div

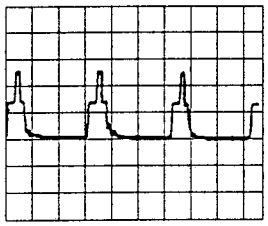
IC 601 pin 3

6) 5usn/div 20 volt/div



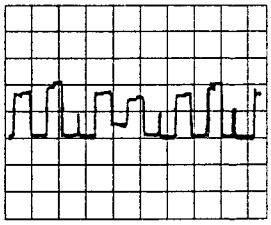
IC 601 pin 5

7) 20usn/div 2 volt/div



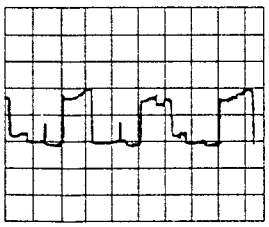
IC 101 pin 38

8) 20usn/div 2 volt/div



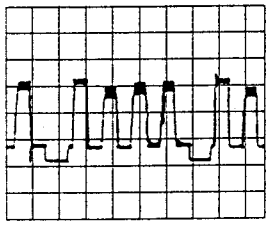
IC 101 pin 20

9) 5usn/div 2 volt/div



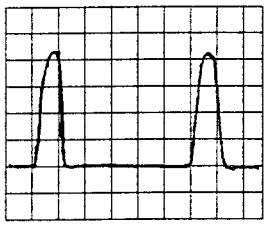
IC 101 pin 19

10) 10 usn/div 2 volt/div



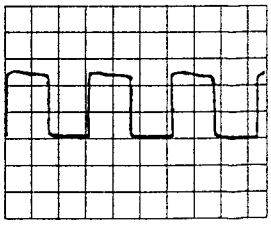
IC 101 pin 18

11) 10 usn/div 250 volt/div



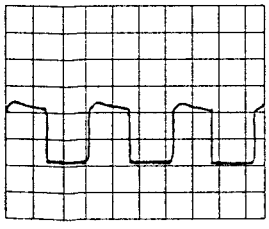
Collector of Q602

12) 20 usn/div 0.2 volt/div



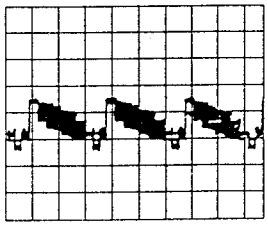
IC 101 pin 37

13) 20usn/div 50 volt/div



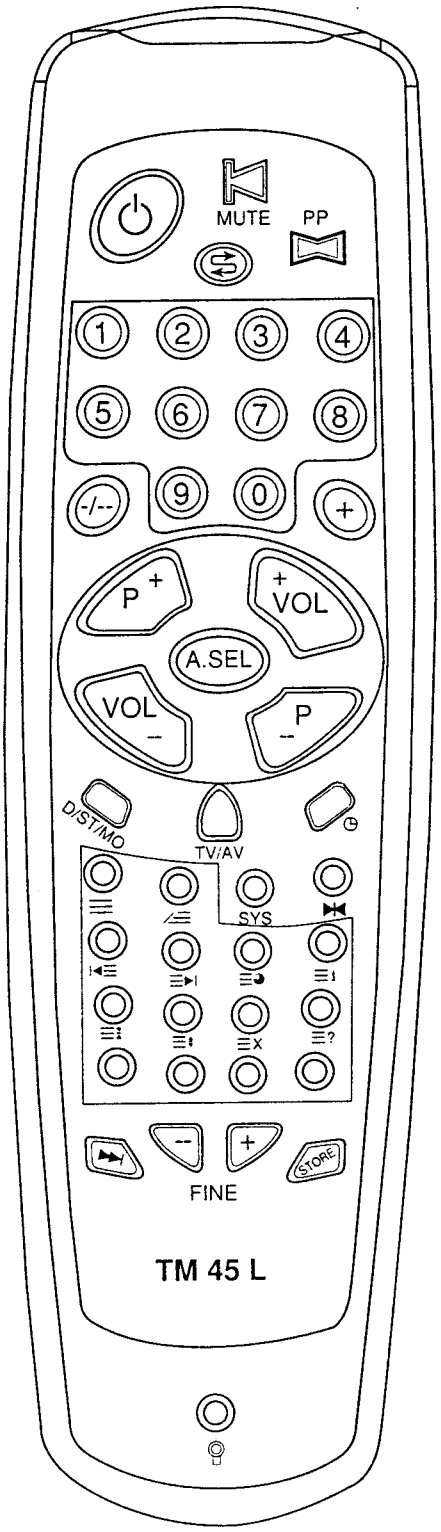
Collector of Q601

14) 20usn/div 1 volt/div



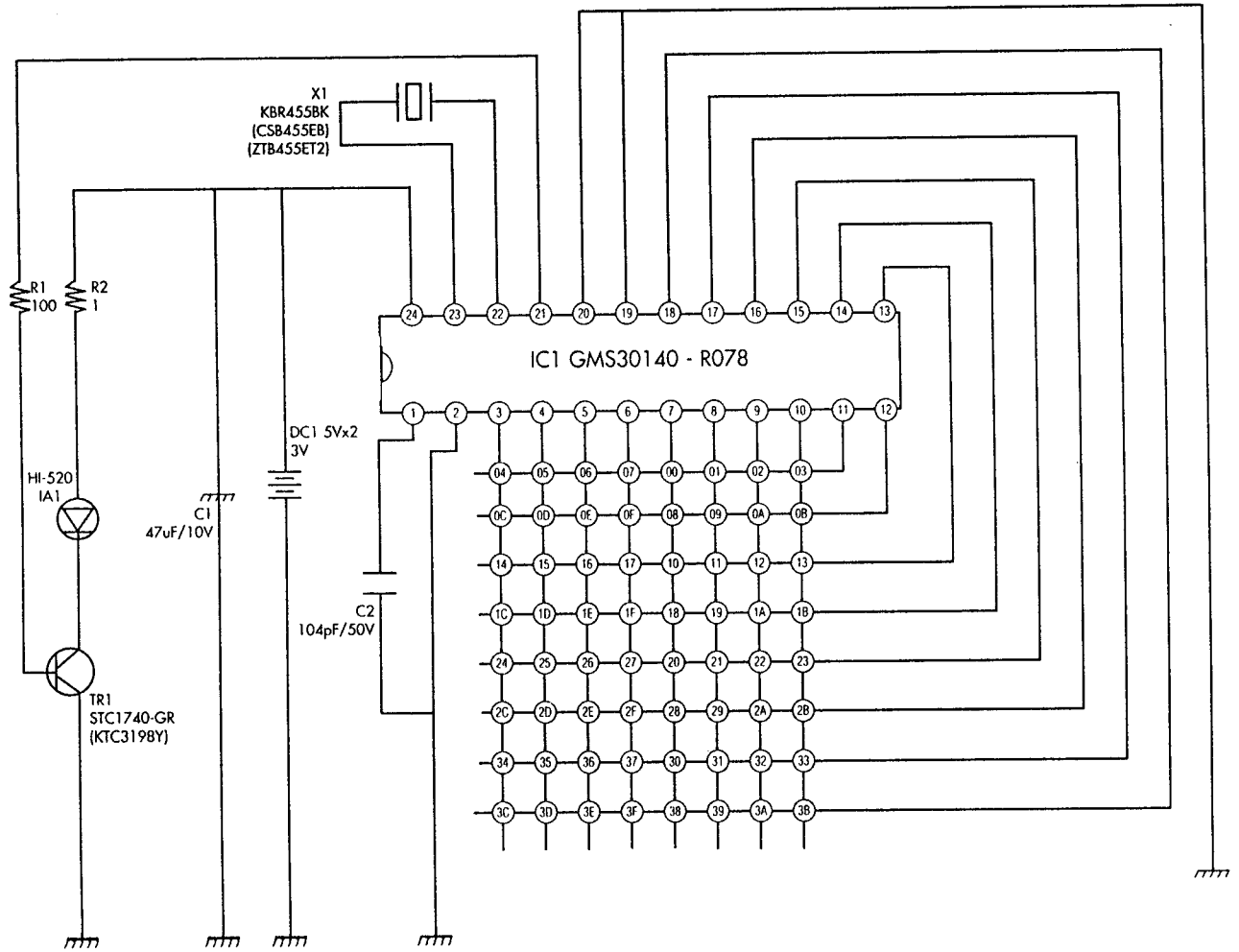
IC 101 pin 13

RC HAND UNIT AND CIRCUIT DIAGRAM



REMOTE CONTROLLER TRANSMITTER PCB CIRCUIT DIAGRAM

CODE	HEXA	FUNCTION	MODEL		REMARKS
0	00	0			
1	01	1			
2	02	2			
3	03	3			
4	04	4			
5	05	5			
6	06	6			
7	07	7			
8	08	8			
9	09	9			
10	0A	-/--			
11	0B				
12	0C				
13	0D				
14	0E	PP			
15	0F				
16	10	+			
17	11	−			
18	12				
19	13				
20	14				
21	15				
22	16				
23	17				
24	18				
25	19				
26	1A				
27	1B				
28	1C				
29	1D				
30	1E				
31	1F				
32	20	P+			
33	21	P-			
34	22				
35	23				
36	24				
37	25				
38	26				
39	27				
40	28				
41	29	STORE			
42	2A				
43	2B	F-			
44	2C	F+			
45	2D	SYS			
46	2E				
47	2F				
48	30				
49	31				
50	32				
51	33				
52	34				
53	35				
54	36				
55	37				
56	38	TV/AV			
57	39				
58	3A				
59	3B	SEL			
60	3C				
61	3D				
62	3E				
63	3F				



THE DESCRIPTION OF THE INTEGRATED CIRCUITS

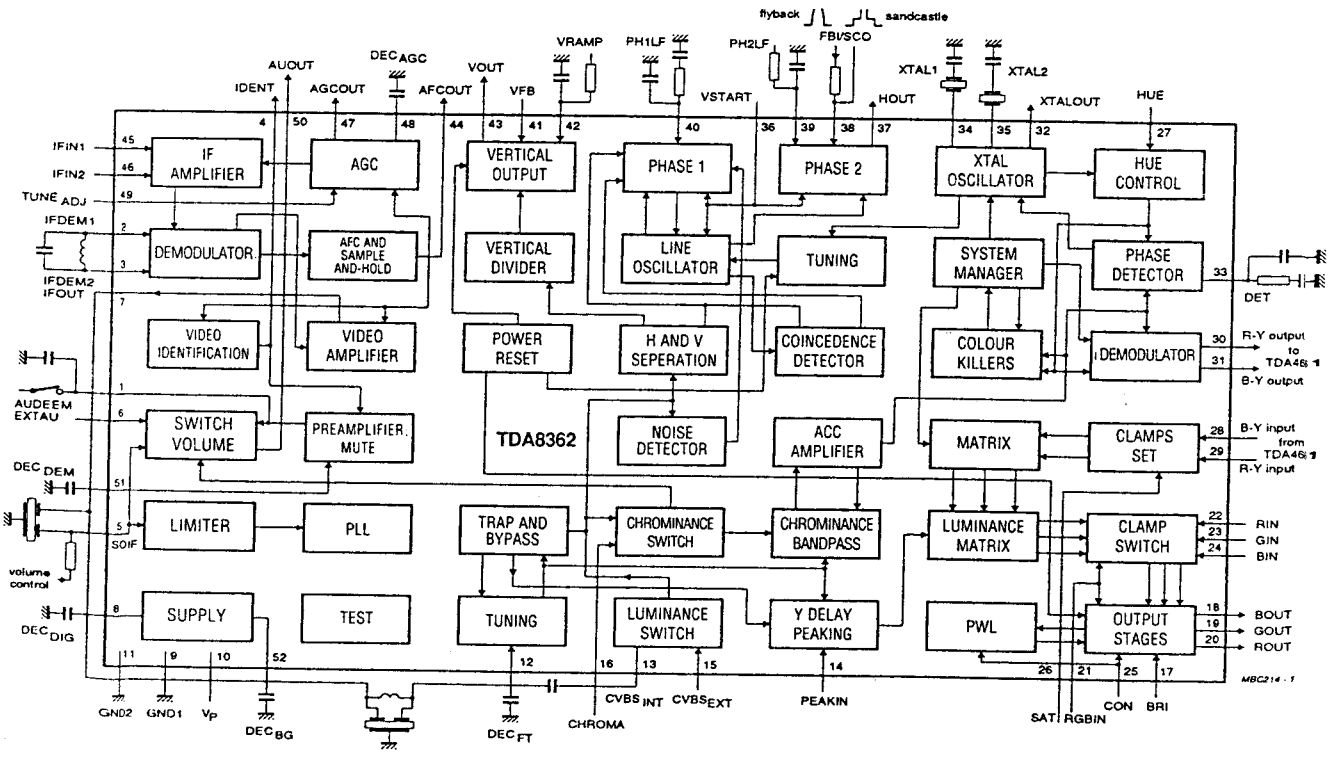
Video Processing Unit With TDA8362

Video and time base is based on the TDA 8362 Multistandard TV Processor(Pal Decoder),TDA 4665 Base-band Delay Line and TDA8395 Secam Decoder.

The Features of this Concept:

- Multistandard vision IF circuit (positive and negative modulation)
- Multistandard FM sound demodulator (4.5 MHz to 6.5 MHz)
- External Video and Audio Switches
- Integrated chrominance traps and baseband filters
- Integrated luminance delay line
- RGB control circuit with linear RGB inputs
- Horizontal synchronization with two loops and alignment-free horizontal oscillator without external components.
- Vertical count-down circuit (50-60 Hz) and vertical preamplifier
- Low dissipation
- Only one adjustment (vision IF demodulator)

Block Diagram



PINNING

PIN		PIN VOLTAGE
1	Audio deemphasis and +/- mod.switch	: 3V and 0.3Vrms(FM Audio)
2	IF-demodulator tuned circuit	: 6V
3	IF-demodulator tuned circuit	: 6V
4	Video identification output	: 5V
5	Sound IF plus volume control	: 0.5V - 4V
6	External audio input	: 4V
7	IF video output	: 2.5V and 2.0 Vpp (Video)
8	Decoupling digital supply	: 8V
9	Ground	: -
10	Positive supply (8V)	: 8V
11	Ground	: -
12	Decoupling filter tuning	: 3.25V
13	Internal CVBS input	: 4.25V
14	Peaking input	: 4V
15	External CVBS input	: 3.5V
16	Chroma + A/V switch input	: 0V(TV)-8V (AV)
17	Brightness control input	: 1V - 3.5V
18	B-output	: 2.5V - 4Vpp
19	G-output	: 2.5V - 4Vpp
20	R-output	: 2.5V - 4Vpp
21	RGB-insertion and blanking	: 0V TV and 1.5V RGB mode
22	R-input for insertion	: 3.3V and 0.7 Vpp
23	G-input for insertion	: 3.3V and 0.7 Vpp
24	B-input for insertion	: 3.3V and 0.7 Vpp
25	Contrast control input	: 0V - 3V
26	Saturation control input	: 0V - 3V
27	Hue control input (or chroma out)	: 6V
28	B-Y input signal	: 4V
29	R-Y input signal	: 4V
30	R-Y output signal	: 1.5V
31	B-Y output signal	: 1.5V
32	4.43MHz output for TDA8395	:1.6V(PAL) 4.5V(SEC)
33	Loop filter burst phase detector	: 4.5V
34	3.58 MHz X-tal connection	: 3V
35	4.43MHz X-tal connection	: 2V
36	Start horizontal oscillator	: 8V

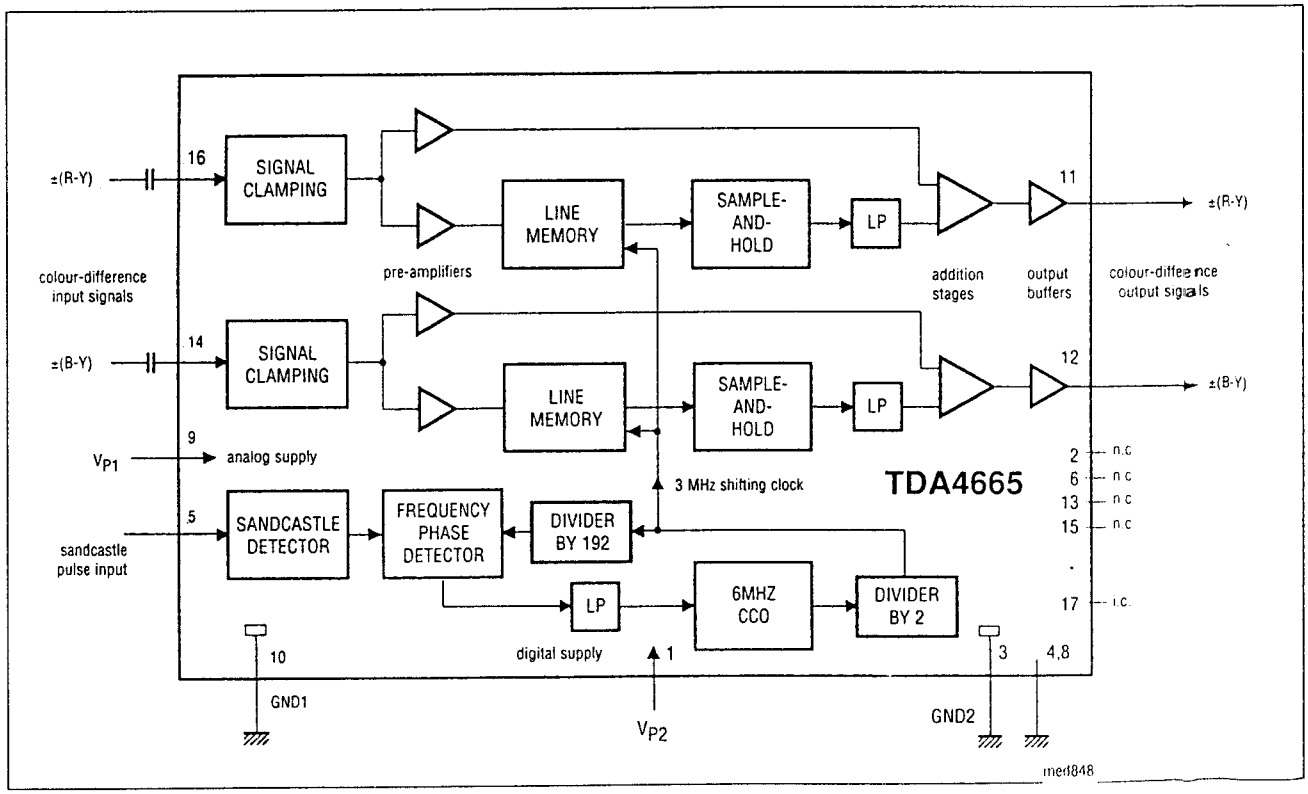
PIN		PIN VOLTAGE
37	Horizontal output	: 0.6Vp-p 15.6 KHz
38	Flyback input / sandcastle output	: 6Vpp
39	G2 loop filter	: 3V
40	G1 loop filter	: 3.75V
41	Vertical feedback input	: 2.5V and 1.0Vpp
42	Vertical ramp generator	: 2.5V and 1.5Vpp
43	Vertical output	: 2.5V
44	AFC output	:
45	IF-input	: 4V
46	IF-input	: 4V
47	Tuner AGC output	: -
48	AGC decoupling capacitor	: 4V
49	Tuner take-over adjustment	: -
50	Audio output	: 3.4V
51	Decoupling sound demodulator	: 4.5V
52	Decoupling bandgap supply	: 6.5V

TDA 4665

The TDA4665 is an integrated baseband delay line circuit. It provides a delay of 64 us for the color difference signals. (R-Y) and (B-Y), in multi-standard TVs.

PINNING		PIN VOLTAGE
1	Digital supply voltage	: 5V
2	Not connected	: -
3	Digital ground	: 0V
4	Test input	: 0V
5	Sandcastle input	: -
6	Not connected	: -
7	Test input	: -
8	Test input	: -
9	Analog supply voltage	: 5V
10	Analog ground	: -
11	-(R-Y) output	:3.25V
12	-(B-Y) output	:3.25V
13	Reference current	: -
14	-(B-Y) input	:1.35V
15	Not connected	: -
16	-(R-Y) input	:1.35V

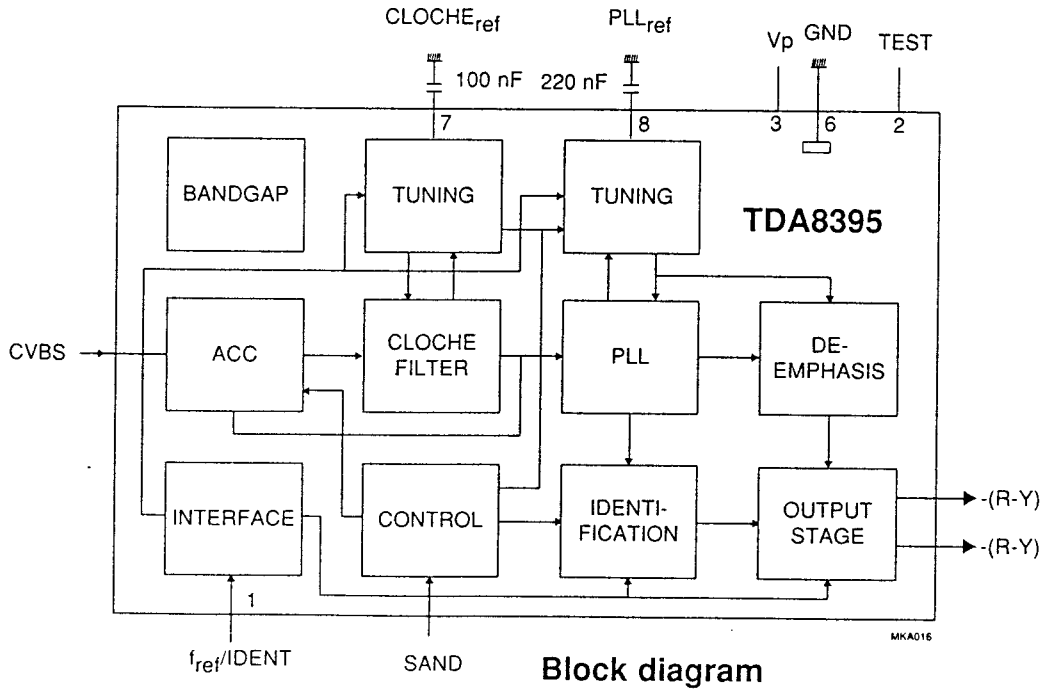
Block diagram



TDA 8395

The TDA8395 is a self calibrating fully integrated SECAM decoder.

PINNING		PIN VOLTAGE
1	Reference frequency input	: -
2	Test output	: -
3	Positive supply voltage	: 8V
4	Not connected	: -
5	Not connected	: -
6	Ground	: 0V
7	Cloche reference filter	: -
8	PLL reference	: -
9	-(R-Y) output	: 1V
10	-(B-Y) output	: 1.3V
11	Not connected	-
12	Not connected	: -
13	Not connected	: -
14	Not connected	: -
15	Sandcastle pulse input	: 6Vpp
16	Video input	: -



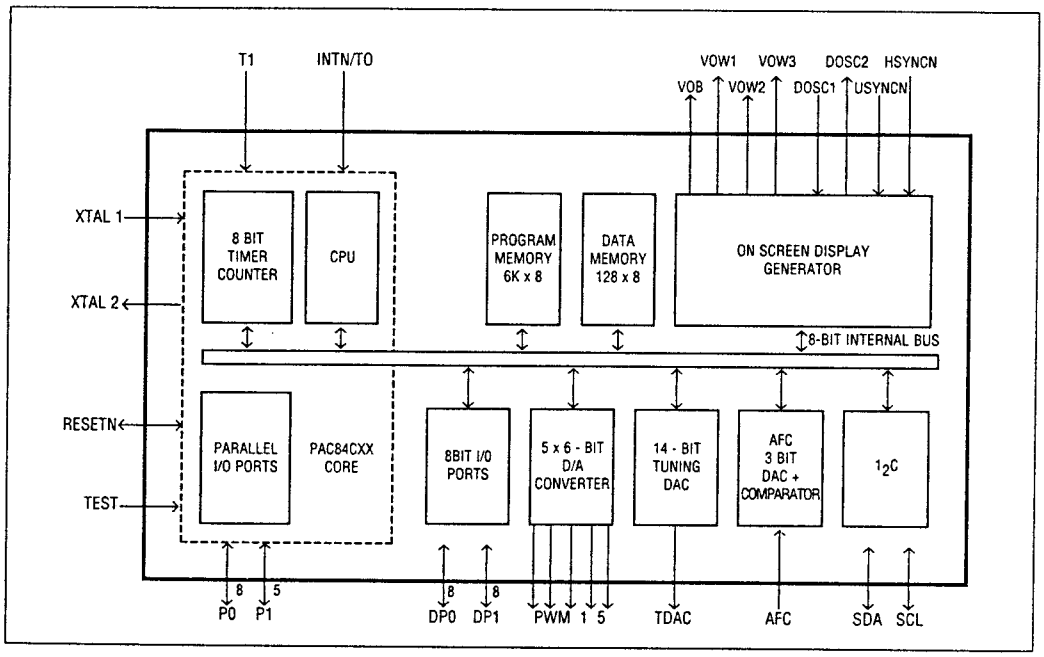
Block diagram

Microcontroller Unit

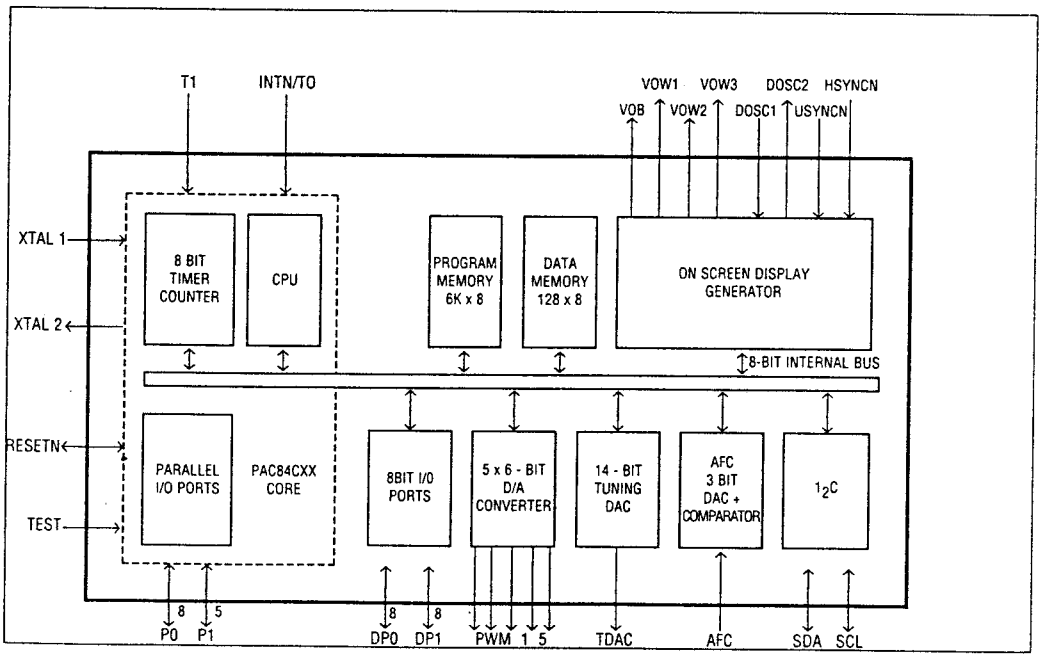
CTV 352 S(for stereo) and CTV 322(for mono) are a voltage synthesis tuning system with on screen display OSD of all relevant control function. Analog picture settings are controlled by 4 on-chip digital to analog converters. Sound volume can be controlled by the fifth on-chip digital to analog converter in mono only system. Full sound (volume, bass, treble, balance) in German Stereo and Nicam configuration and Teletext can be controlled via the I2C bus using a sound processor and teletext decoder. This controllers can control up to two scart plugs.

PINNING		PIN VOLTAGE
1	Tuning voltage control output	: 5V - 0V
2	Volume control output	: 0 - 5V
3	Brightness control output	: 0 - 5V
4	Color control output	: 0 - 5V
5	Contrast or hue control output	: 0 - 5V
6	Tone, balance or hue control output	: -
7	Band-switch 0-output	: -
8	Band-switch 1-output	: -
9	Analogue AFC sense input	: 2-4V
10	Dual/Non Dual language sound input	: -
11	VTR time constant control output	: -
12	Ext./int. audio/video source control output	: 5V (TV) - 0V (AV)
13	Keyboard scan line input/output	: -
14	Keyboard scan line input/output	: -
15	Keyboard scan line input/output	: -
16	Keyboard scan line input/output	: -
17	Keyboard scan line input/output	: -
18	Keyboard scan line input/output	: -
19	Keyboard scan line input/output	: -
20	System mode strobe output	: 5V
21	Ground supply input	: -
22	OSD red output	: 4.5Vpp
23	OSD green output	: 4.5Vpp
24	OSD blue output	: 4.5Vpp
25	OSD fast blanking output	: 4.5Vpp
26	Horizontal synchronization input	: 5Vpp HF
27	Vertical synchronization input	: 5Vpp HF
28	LC oscillator input for OSD	: 5V
29	LC oscillator output for OSD	: 5V
30	Test input; connected to ground	: -
31	Oscillator input; 10MHz crystal	: -
32	Oscillator output	: 2V
33	Power-on reset input/output	: 5V
34	Horizontal coincidence input	: 4.5V
35	RC-5 remote control input	: 4V
36	Mono/Stereo or language 1/2 output	

PINNING		PIN VOLTAGE
37	Sound effect control output	: -
38	System select output	: -
39	I^2C-bus clock signal output	: 5V and 5Vpp
40	I^2C-bus data signal output	: 5V and 5Vpp
41	Standby/On control input/output	: 0V (ST-BY) 5V (Open)
42	+5V supply voltage input	: 5V



Block diagram of PCA84C641



Block diagram of PCA84C841

Power Supply With TDA4605

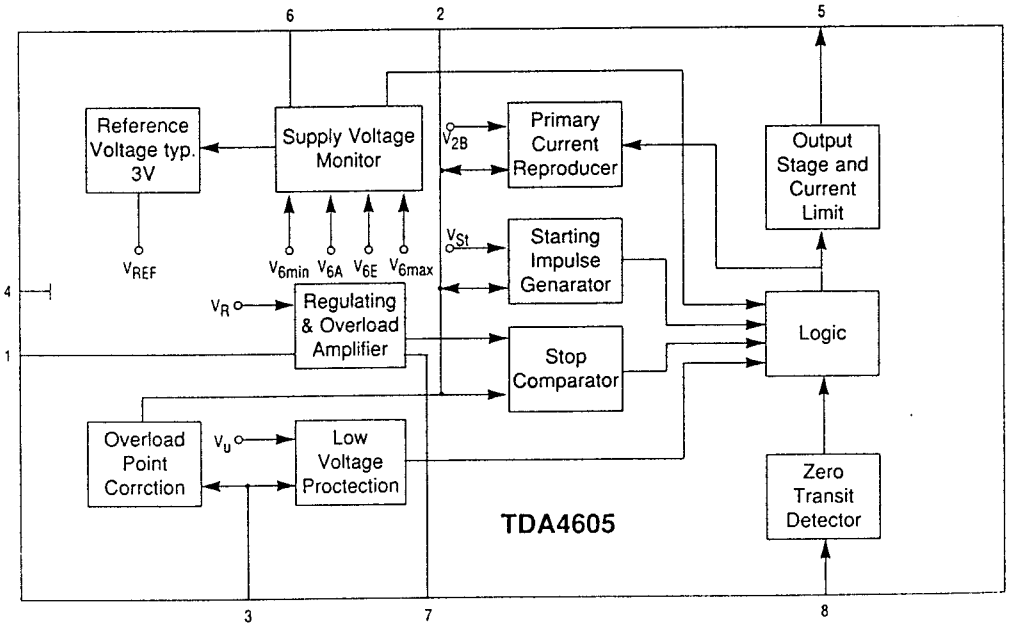
The IC TDA 4605 controls the MOS power transistor and performs all necessary regulation and monitoring functions in free running flyback converters.

Features

- Overload protection
- Burst operation under short circuit conditions
- Loop error protection
- Switch-off if line voltage is too low
- Line voltage compensation of overload point
- Soft start for quite start up
- Chip over temperature protection
- On-chip parasitic transformer oscillation suppression circuit

TDA 4605-3

PINNING		PIN VOLTAGE	
		ST-BY	NORM.
1	Information Input Concerning Secondary Voltage	0.4V	0.4V
2	Information Input Regarding the Primary Current	1V	1.2V
3	Input for Primary Voltage Monitor	2.1V	2V
4	Ground	0V	0V
5	Output	0.8V	8V (10Vpp)
6	Supply voltage Input	12V	12.8V
7	Input for Soft-Start and Integrator Circuit	1.1V	1.9V
8	Input for the Feedback of the Oscillator	0.3V	0.4V



Pin Definitions and Functions

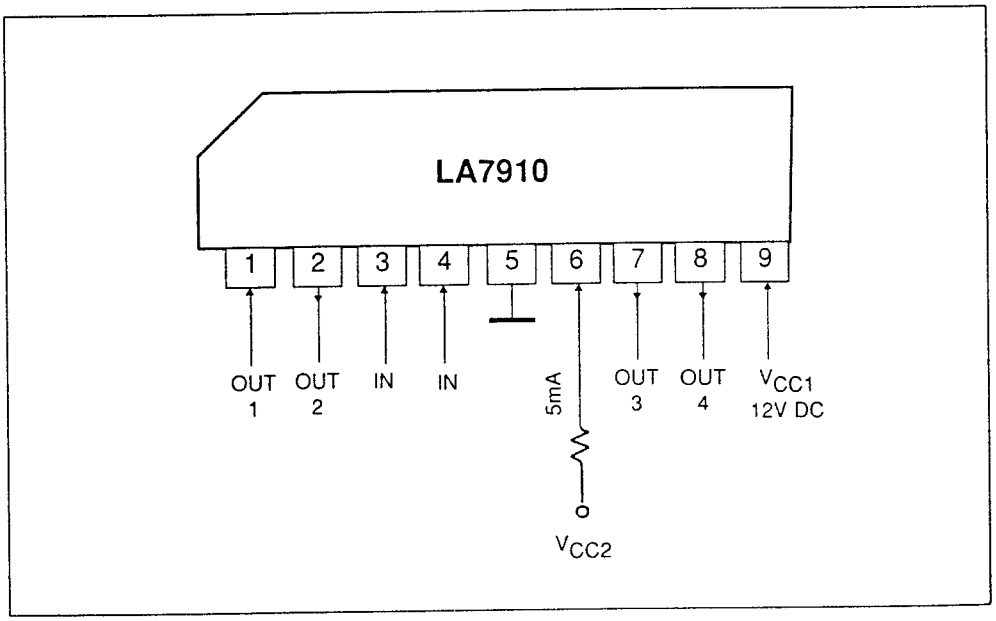
Pin No.	Function
1	**Information Input Concerning Secondary Voltage** By comparing the regulating voltage - obtained trom the regulating winding of the transformer - with the internal reference voltage, the output impulse width on pin 5 is adjusted to the load of the secondary side (normal, overload, short-circuit, no load).
2	**Information Input Regarding the Primary Current** The primary current rise in the primary winding is simulated at pin 2 as a voltage rise by means of external RC-element. When a voltage level is reached thats derived from the regulating voltage at pin 1, the output impulse at pin 5 is terminated. The RC-element serves to set the maximum power at the overload point set.
3	**Input for Primary Voltage Monitoring** In the normal operation V3 is moving between the thresholds V3H and V3L (V3H > V3 > V3L)- V3 < V3L: SMPS is switched OFF (line voltage too low). V3 > V3H : Compensation of the overload point regulation (controlled by pin 2) starts at V3H : V3L = 1.7.
4	**Ground**
5	**Output** Push-pull output provides ±1 A for rapid charge and discharge of the gate capacitance of the power MOS-transistor.
6	**Supply Voltage Input** A stable internal reference voltage VREF is derived from the supply voltage also the switching thresholds V6A, V6E, V6 max and V6 min for the supply voltage detector. If V6 > V6E then VREF is switched on and swiched off when V6 < V6A - In addition the logic is only enable for V6 min < V6 < V6 max-
7	**Input for Soft-Start** Start-up will begin with short pulses by connecting a capacitor from pin 7 to ground.
8	**Input for the Oscillation Feedback** After starting oscillation, every zero transition of the feedback voltage (falling edge) through zero (failing edge) triggers an output pulse at pin 5. The trigger threshold is at + 50 mV typical.

TUNER

TECC2989VA15B and TEMIC KHZ 3303 (for 3 bands) and TECC2985VA14B (for single band) VST tuners are used with a band switch circuit LA7910.

LA 7910

PINNING	PIN VOLTAGE		
	VHF1	VHF3	UHF
1 Output	12	0	0
2 Output	0	12	0
3 Input	0	5V	0
4 Input	0	0	5V
5 Ground	-	-	-
6 Supply voltage (18V)	13.5	13.5	13.5
7 Output	0	0	12
8 Output	0	0	0
9 Supply voltage (12V DC)	12	12	12



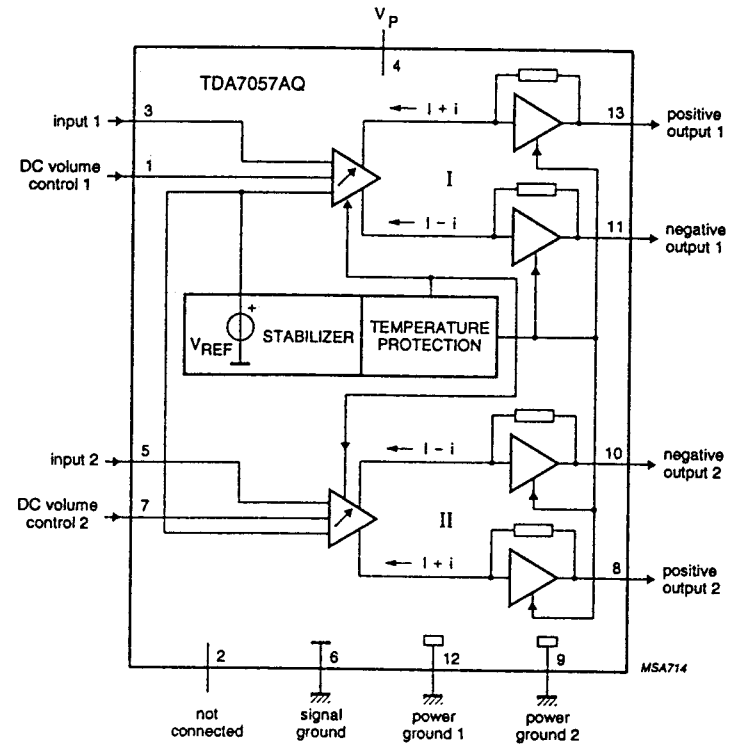
Block diagram of LA7910

Audio Output Amplifiers

TDA 7056A Audio amplifier is used on mono TV sets. Output is 4 W RMS on 16 Ohms speaker at 10 % THD. On stereo models TDA 7057AQ is used . Outputs are 2X4 W RMS on 8 Ohms speakers at 10 % THD.

TDA 7057AQ

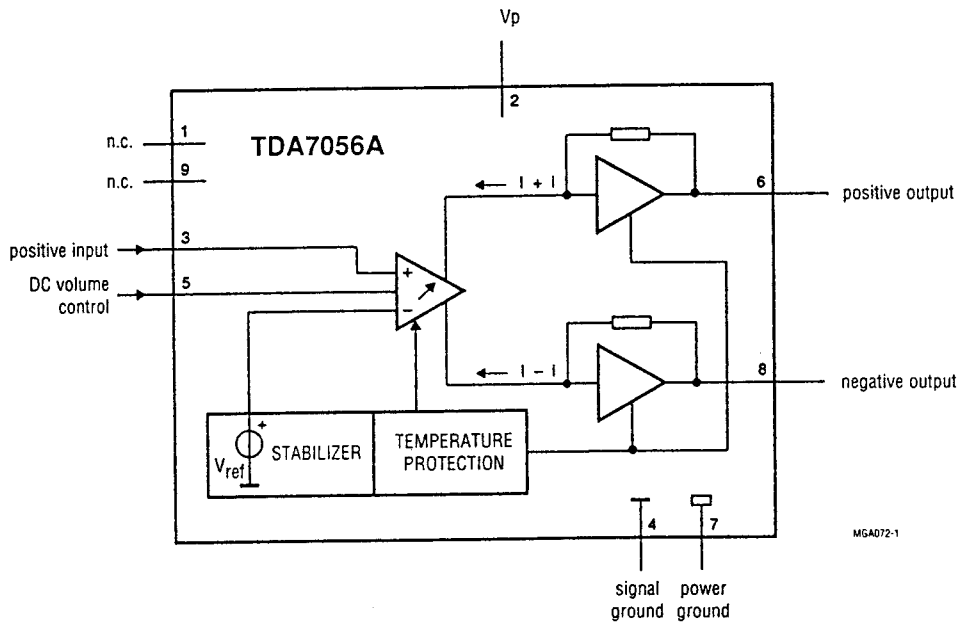
PINNING		PIN VOLTAGE
1	DC volume control 1	: 1.0V
2	Not connected	: -
3	Voltage input 1	: 1.5Vpp
4	Positive supply Voltage	: 12.5V
5	Voltage input 2	: 1.5Vpp
6	Signal ground	: -
7	DC volume control 2	: 1.0V
8	Positive output 2	: -
9	Power ground 2	: -
10	Negative output 2	: -
11	Negative output 1	: -
12	Power ground 1	: -
13	Positive output 1	: -



Block diagram

TDA 7056A

PINNING		PIN VOLTAGE
1	Not connected	:
2	Positive supply voltage	: 12.5V
3	Voltage input	: 1.0Vpp
4	Signal ground	:
5	DC volume control	: 1.0V
6	Positive output	
7	Power ground	:
8	Negative output	:
9	Not connected	:



Block diagram

Sound IF Circuit

On L system, TDA 9830 is used as AM Demodulator on mono TV sets, TDA 4470B is used for Ncam sound intercarrier and AM Demodulator on stereo TV sets with suitable SAW filters

On BG and I systems , TDA 3845 is used for sound intercarrier with a SAW filter on Nicam TV sets.

On German Stereo models, TBA 120U is used as FM demodulator for stereo sound carrier.

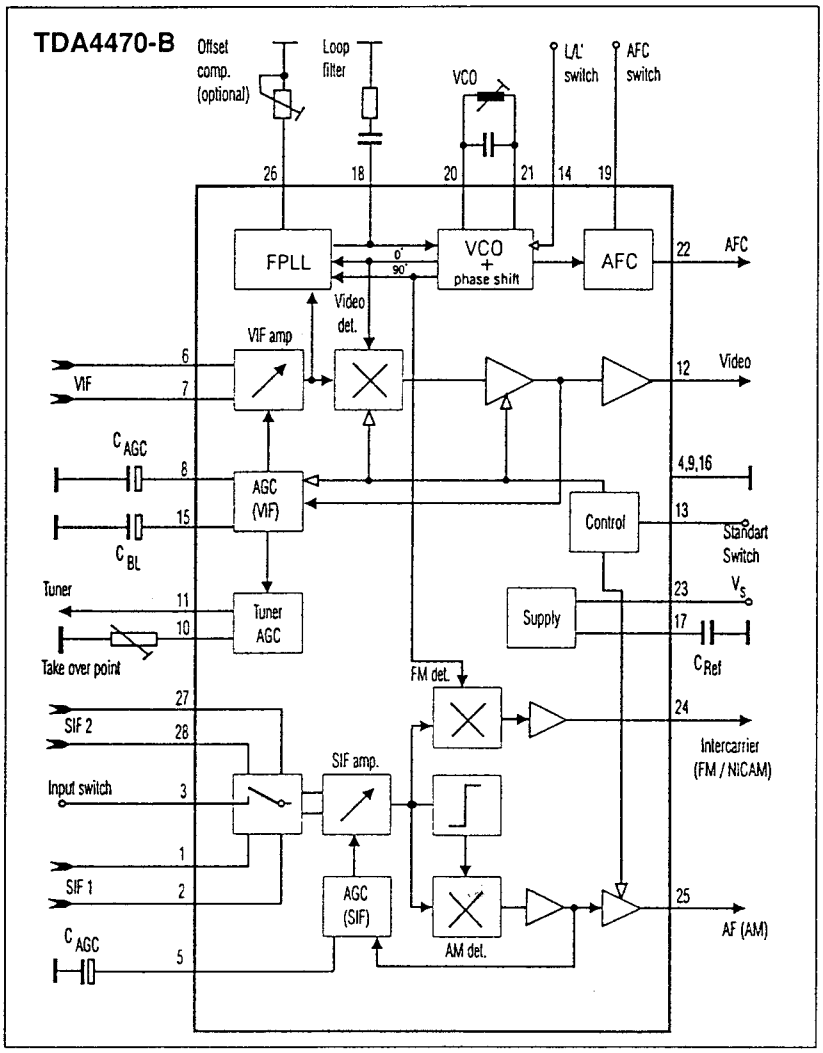
TDA4470B

The TDA4470B is an integrated bipolar circuit for multistandard video/sound IF signal processing in TV/VCR and multimedya applications.

Features

- 5 V supply voltage, low power consumption
- Active carrier generation by FPLL principle for true synchronous demodulation
- Very linear video demodulation, good pulse response and excellent intermodulation figures
- VCO circuit is operating on picture carrier frequency, the VCO frequency is swithcable for the L` mode
- Alignment free AFC without external reference circuit, polarity of the AFC curve is switchable
- VIF AGC for negative modulated signals and for positive modulation
- Tuner AGC with adjustable take over point
- Alignment free quasi parallel sound (QPS) mixer for FM/NICAM sound IF signals
- Intercarrier output signals is gain controlled
- Complete alignment free AM demodulator with gain controlled AF output
- Separate SIF AGC with average detection
- Two independent SIF inputs

Parallel operation of the AM demodulator and QPS mixer (for NICAM L stereo sound)



TDA 4470 - B

PINNING		PIN VOLTAGE
1	SIF1 input (symmetrical)	: -
2	SIF1 input (symmetrical)	: -
3	Input selector switch	: 0 V - 5 V
4	Ground	: 0 V
5	SIF-AGC (time constant)	: -
6	VIF input (symmetrical)	: -
7	VIF input (symmetrical)	: -
8	VIF-AGC (time constant)	: -
9	Ground	: 0 V
10	Take over point, tuner AGC	: -
11	Tuner AGC output current	: -
12	Video output	: -
13	Standard switch	: 0 V - 5 V
14	L' switch	: 0 V - 5 V
15	Black level capacitor	: -
16	Ground	: 0 V
17	Internal reference voltage	: -
18	Loop filter	: -
19	AFC switch	: -
20	VCO circuit	: -
21	VCO circuit	: -
22	AFC output	: -
23	Supply voltage	: -
24	Intercarrier output	: -
25	AF output - AM sound	: -
26	Offset compensation	: -
27	SIF2 input (symmetrical)	: -
28	SIF2 input (symmetrical)	: -

TDA9830

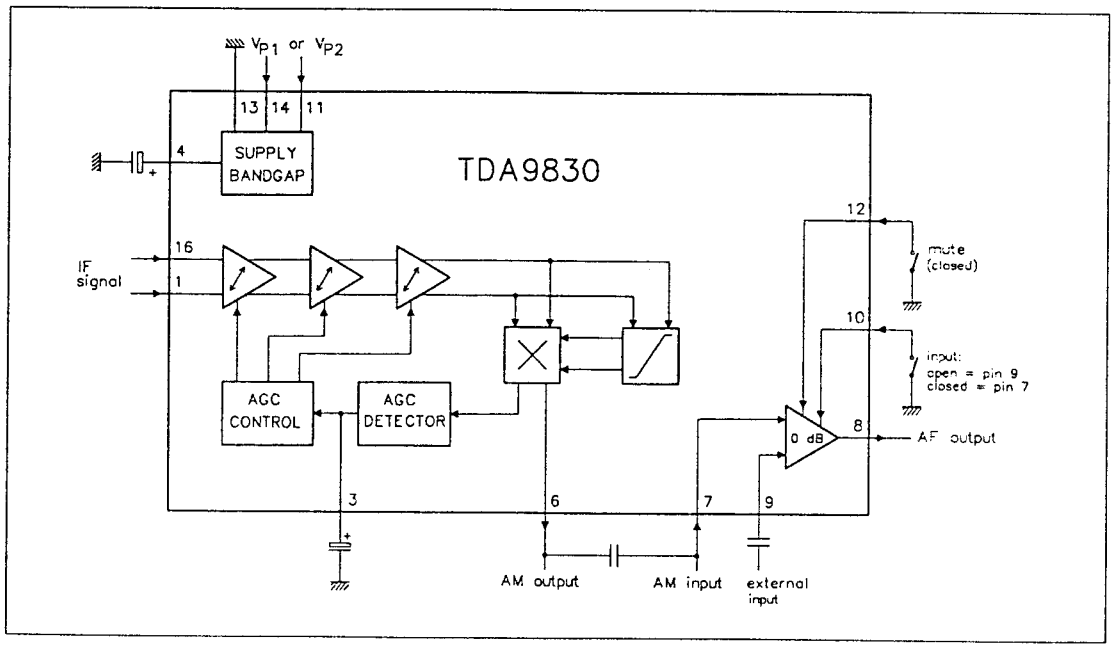
The TDA9830, is a monolithic integrated circuit, is designed for AM sound demodulation used in L and L` standard. The IC provides an audio source selector and also mute switch.

Features

- Adjustment free wideband synchronous AM demodulator
- Audio source mute switch
- Audio level according EN50049
- 5V to 8V power supply or 12V alternative
- Low power consumption

TDA 9830

PINNING		PIN VOLTAGE
1	Sound IF differential input signal	:
2	Not connected	:
3	AGC capacitor	:
4	REF voltage filtering capacitor	:
5	Not connected	:
6	AM demodulator output	: 0.5Vpp
7	Input signal (from AM) to audio switch	: 0.5Vpp
8	Output signal from audio switch	: 0.5Vpp
9	Input signal (from external) to audio switch	: 0V (int) - 5V (ext)
10	Switch input select control	: 12V
11	Supply voltage +12V (alternative)	: -
12	Mute control	:
13	Ground (0V)	: 0V
14	Supply voltage +5 to +8V	:
15	Not connected	:
16	Sound IF differential input signal	:



TDA3845

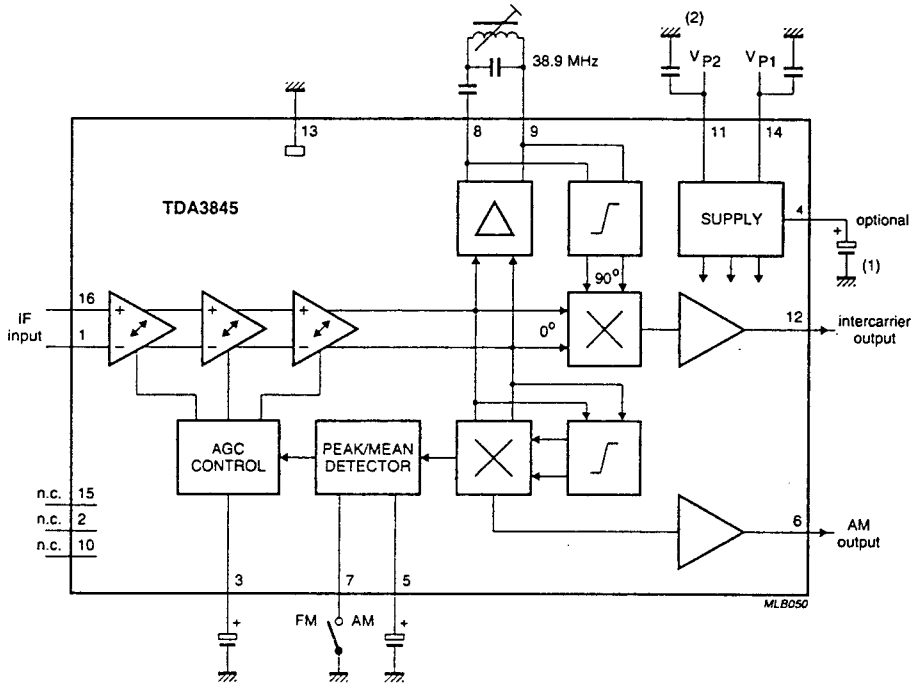
The TDA3845 is a quasi split -sound IF circuit which is designed to provide high performance television FM/AM sound.

Features

- Gain controlled wide band IF amplifier
- High precision internal 90` phase shifter for quadrature demodulator
- Amplitude detector for gain control which operates as a peak detector for FM sound and as a mean level detector for AM sound (switchable)
- In-phase wideband synchronous demodulator for AM detection
- Stabilizer circuit for ripple rejection and constant output signals
- ESD protection for all pins
- Suitable for all FM standards and L as well as L- accent standard
- NICAM compatible

TDA 3845

PINNING		PIN VOLTAGE
1	IF amplifier input 2	: -
2	Not connected	: -
3	AGC control capacitor	: -
4	Optional capacitor (see note 10 to the characteristics)	: -
5	Peak/mean detector capacitor	: -
6	AM output	: 1.0 Vpp
7	FM/AM switch	: 0Vpp
8	LC reference circuit for the picture carrier	:
9	LC reference circuit for the picture carrier	:
10	Not connected	:
11	Positive supply voltage 2 (+12V); note 1	: 12V
12	Intercarrier output	:
13	Ground (0V)	: 0V
14	Positive supply voltage 1 (+5V)	:
15	Not connected	:
16	IF amplifier input 1	:



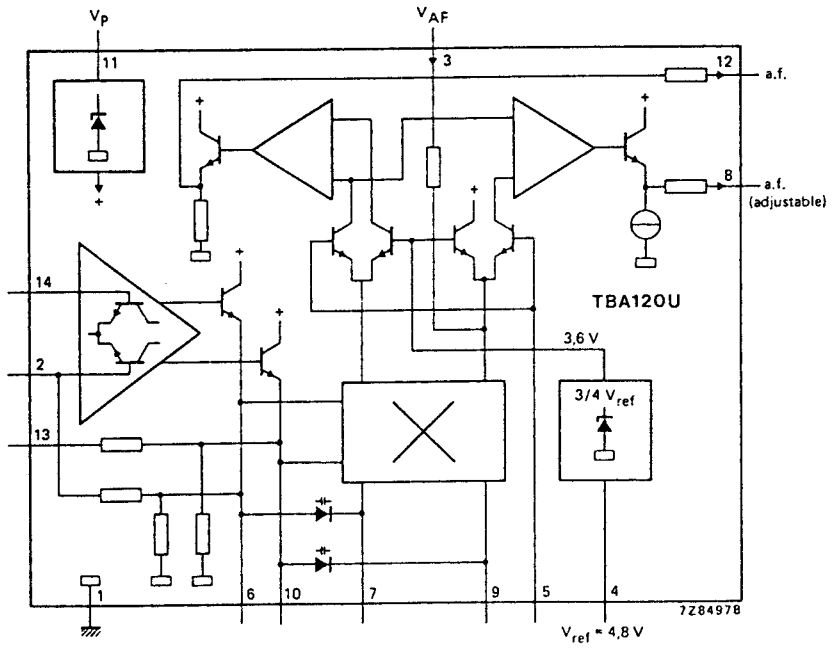
Block diagram

TBA120U

The TBA120U is an IF amplifier with a symmetrical FM demodulator and an AF amplifier with adjustable output voltage.

TBA 120U

PINNING		PIN VOLTAGE
1	Ground	: 0V
2	Mute	: -
3	Input resistance	: -
4	Supply current and the reference	: -
5	Adjustment voltage	: -
6	IF output voltage	: -
7	Tank to reference	: -
8	Adjustable output	: -
9	Tank to reference	: -
10	IF output voltage	: -
11	Positive supply	: 12V
12	De-emphesize out	: 0.5Vpp
13	SIF input	: -
14	SIF input	: -



Block diagram

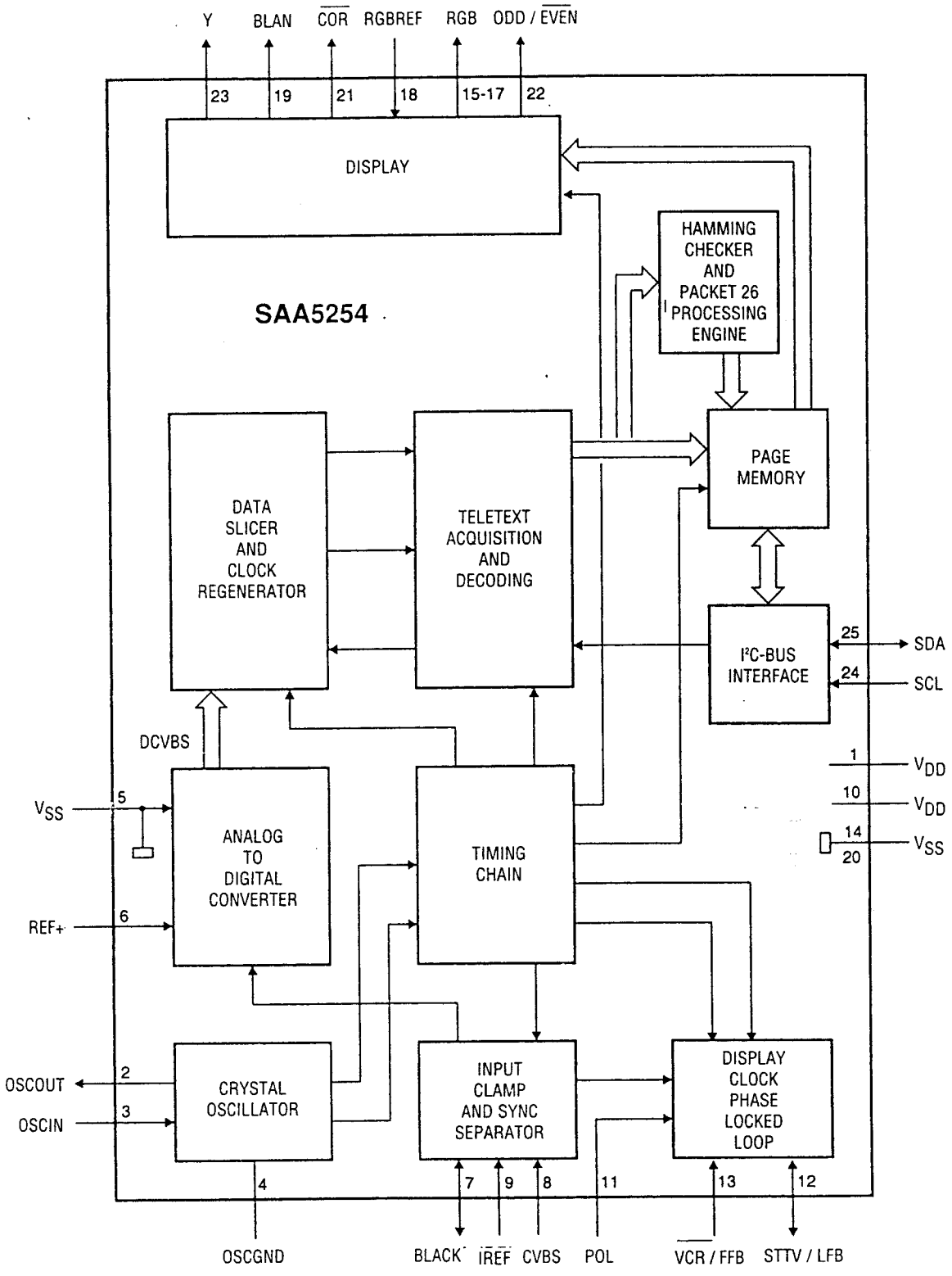
TELETEXT PART

Simple text stage consists of SAA 5254 Teletext decoder. This IC is controlled via I2C bus.

Basically fastext stage consists two IC's, STV 5346 Teletext decoder and CTV 974 Fastext controller with I²C bus interface. For List Mode a 2K EEPROM (PCF8582) can be added.

SAA 5254

PINNING		PIN VOLTAGE
1	+ 5V supply	: -
2	27 MHz crystal oscillator output	: -
3	27 MHz crystal oscillator input	: -
4	0V crystal oscillator ground	: 0V
5	0V ground	: 0V
6	Positive reference voltage for the ADC.	: 5V
7	Video black level storage pin, connected to ground via a 100 nF capacitor	: -
8	Composite video input pin	: 1Vpp
9	Reference current input pin, connected to ground via a 27kohm resistor	: -
10	+5V supply	: 5V
11	STTV/FB/FFB polarity selection pin	: -
12	Sync to TV output pin/line flyback input pin. Function controlled by an internal register bit (scan sync mode)	: -
13	PLL time constant switch/field flyback input pin. Function controlled by an internal register bit (scan sync mode)	: -
14	0V ground	: 0V
15	Dot rate character output of the RED color information	
16	Dot rate character output of the GREEN color information	
17	Dot rate character output of the BLUE color information	
18	DC input voltage to define the output high level on the RGB pins	
19	Dot rate fast blanking output	
20	Ground	: 0V
21	Programmable output to provide contrast reduction of the TV picture formixed text and picture displays or when viewing newflash/subtitle pages;open drain output	: -
22	25Hz output synchronized with the CVBS input's field sync pulses to produce a non-interlaced display by adjustment of the vertical deflection currents	: -
23	Dot rate character output of teletext foreground color information; open drain output	: -
24	Serial clock input for the I²C-bus. It can still be driven during power-down of the device	: 5Vpp
25	Serial data port for the I²C-bus; open drain output. It can still be driven during power-down of the device	: 5Vpp
26	to 40 Internally connected.Must be left open-circuit in application	: -



Block diagram for SIT129 (DIL40) package

PCF84C81 (CTV 974)

PINNING		PIN VOLTAGE	
		WITH TEXT	WITHOUT TEXT
1	4-bit I/O Port Bit 2 (P2.2)	: 5V	5V
2	4-bit I/O Port Bit 3 (P2.3) .	: 4.4V	4.4V
3	Bidirectional Clock for Serial I/O	: 4.4V	4.4V
4	8-bit I/O Port Bit 0 (P0.0)	: 5V	5V
5	8-bit I/O Port Bit 1 (P0.1)	: 5V	5V
6	8-bit I/O Port Bit 2 (P0.2)	: 0V	0V
7	8-bit I/O Port Bit 3 (P0.3)	: 4.18V	0V
8	8-bit I/O Port Bit 4 (P0.4)	: 5V	5V
9	8-bit I/O Port Bit 5 (P0.5)	: 0V	0V
10	8-bit I/O Port Bit 6 (P0.6)	: 5V	5V
11	8-bit I/O Port Bit 7 (P0.7)	: 0V	0V
12	Interrupt input / Test Input 0	: 0.2V	0V
13	Test Input 1	: 0.2V	0V
14	Ground	: 0 V	0V
15	Oscillator Input	: 2.46V	2.46V
16	Oscillator Output	: 2.46V	2.46V
17	Reset Input	: 5V	0V
18	8-bit I/O Port Bit 0 (P1.0)	: 5V	5V
19	8-bit I/O Port Bit 1 (P1.1)	: 5V	5V
20	8-bit I/O Port Bit 2 (P1.2)	: 0V	5V
21	8-bit I/O Port Bit 3 (P1.3)	: 0V	0V
22	8-bit I/O Port Bit 4 (P1.4)	: 5V	5V
23	8-bit I/O Port Bit 5 (P1.5)	: 0V	0V
24	8-bit I/O Port Bit 6 (P1.6)	: 5V	5V
25	8-bit I/O Port Bit 7 (P1.7)	: 0V	0V
26	4-bit I/O Port Bit 0 (P2.0)	: 5V	5V
27	4-bit I/O Port Bit 1 (P2.1)	:	

STV 5346A

PINNING	
1	Composite Video Signal Input through Coupling Capacitor
2	Master/Slave Selection Mode
3	+5V
4	STTV/LFB/FFB Polarity Selection
5	Composite Sync Output.Line Flyback Input
6	Field Flyback Input
7	Digital Ground
8	Video Red Signal
9	Video Green Signal
10	Video Blue Signal
11	DC Voltage to define RGB High Level
12	Fast Blanking Output TTL Level
13	Open Drain Contrast Reduction Output
14	25Hz Output Field synchronized for non-interlaced display
15	Open Drain Foreground Information Output
16	Serial Clock Input
17	Serial Data Input/Output
18	To be connected to VssD
19	To be connected to VssD
20	To be connected to VssD
21	PLL Time Constant Selection
22	+5V
23	Oscillator Output 13.875Mhz
24	Oscillator Output 13.875 Mhz
25	Oscillator Ground
26	Analog Ground
27	Grounded to VssA
28	To connect Black Level Storage Capacitor

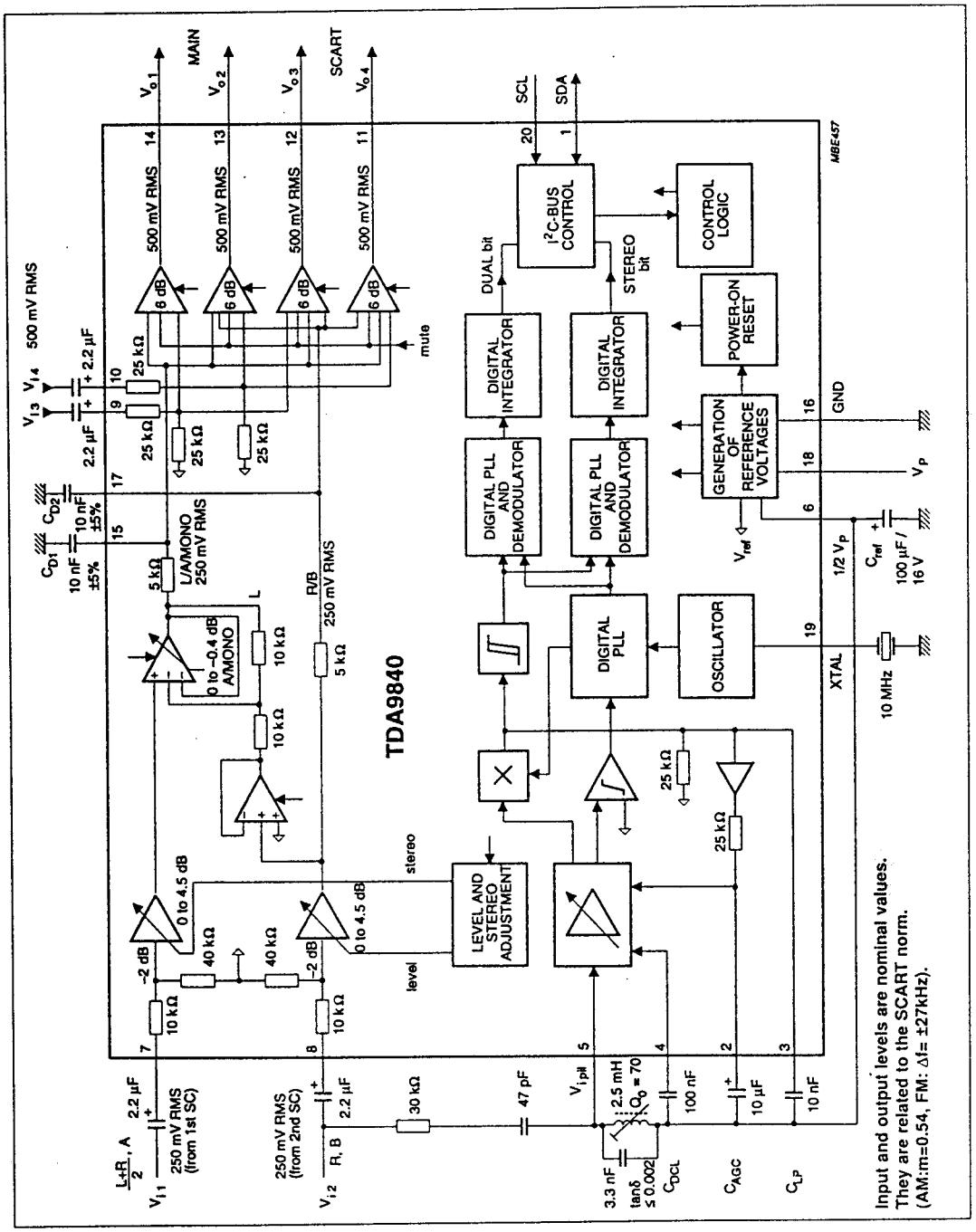
Stereo Part

TDA 9840 is used as German Stereo decoder and SAA 7283 is used Nicam decoder via I2C bus interface. On outputs of G/S and Nicam decoder IC's, TDA 8425 sound processor is used . Also this IC controls via I2C bus.

TDA 9840

PINNING		PIN VOLTAGE
1	I²C-bus data input/output	: 5Vpp
2	AGC capacitor of pilot frequency amplifier	: -
3	Identification low-pass capacitor	: -
4	DC loop capacitor	: -
5	Pilot frequency input input voltage	: -
6	Capacitor of reference voltage (1/2 Vp)	: 2.5V
7	AF input signal Vi_1 (from 1st sound carrier)	: 0.25 Vpp
8	AF input signal Vi_2 (from 2nd sound carrier)	: 0.25 Vpp
9	AF input signal Vi_3 (NICAM or AM sound (standard L)	: -
10	AF input signal Vi_4 (NICAM)	: -
11	AF output signal Vo_4 (SCART)	: 1.0 Vpp
12	AF output signal Vo_3 (SCART)	: 1.0 Vpp
13	AF output signal Vo_2 (main)	: 0.5 Vpp
14	AF output signal Vo_1 (main)	: 0.5 Vpp
15	50 us de-emphasis capacitor of AF Channel 1	: -
16	Ground	: 0V
17	50 us de-emphasis capacitor of AF Channel 2	: -
18	Supply voltage (+5 to +8V)	: 5V
19	10 MHz crystal input	: -
20	I²C-bus clock input	: 5V

Block diagram

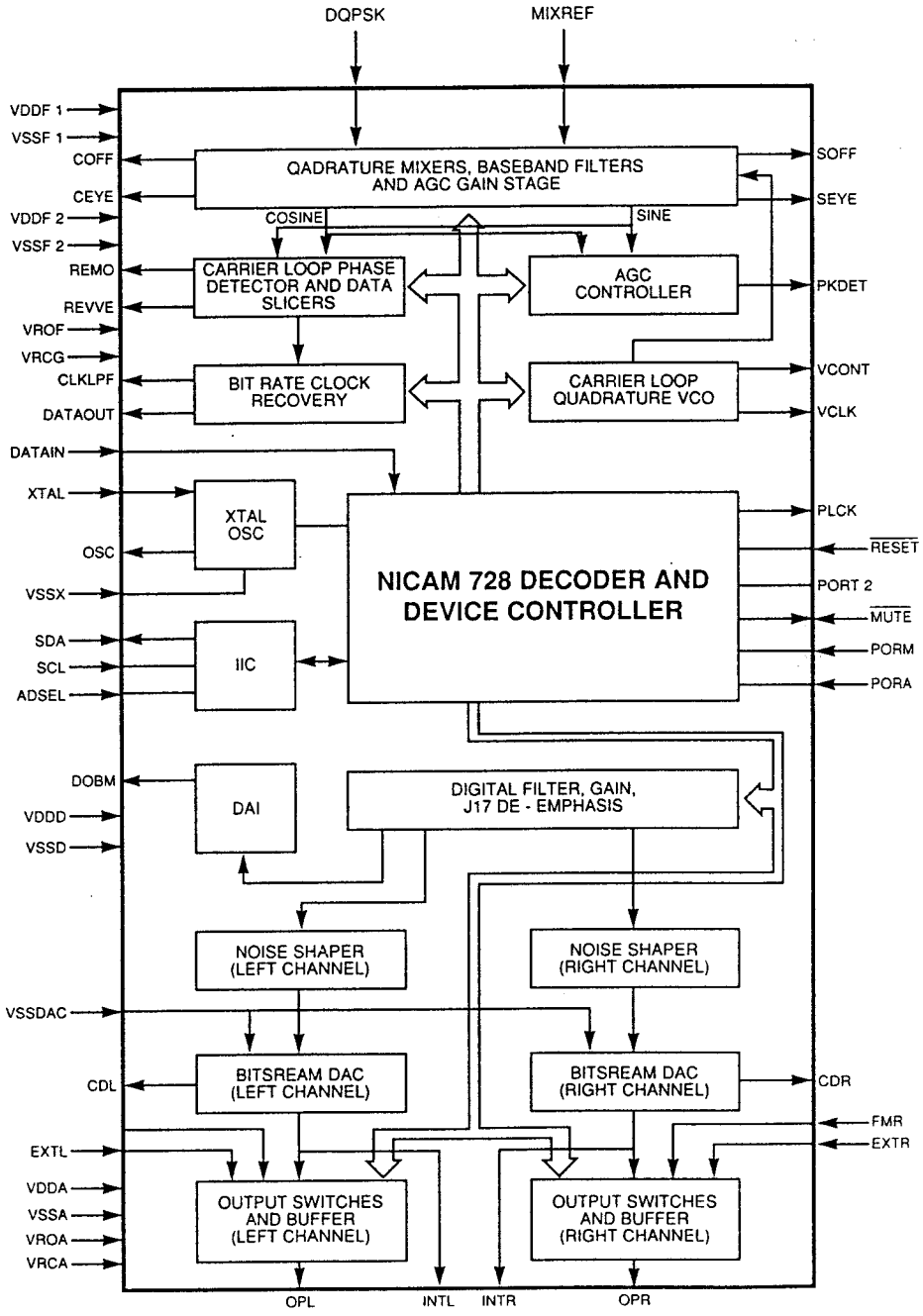


Block diagram of the biplar TV/VTR-stereo decoder

SAA 7283

PINNING		PIN VOLTAGE
1	Mute input	5V
2	Digital audio interference output	2.54V
3	Audio VDD	5V
4	Audio V-SS	0V
5	Internal audio reference voltage buffer	2.5V
6	External analogue input (Right)	0.3V
7	Fm sound input (Right)	2.5V
8	Analogue output (Right)	2.5V 9
9	Not connected	0V
10	Not connected	0V
11	Internal audio reference voltage buffer output	2.5V
12	Quit VSS to DACs	0V
13	Not connected	0V
14	Not connected	0V
15	Analogue audio output (Left)	2.5V
16	FM sound input (Left)	2.5V
17	External analogue input (Left)	0.4V
18	Power-on reset mute	5V
19	Power-on reset audio select	-
20	Carrier loop filter connection	-
21	Carrier loop filter output	-
22	Sine channel eve pattern output	-
23	Sine channel offset compensator capacitor	2.5V
24	Demodulator Vss	0V
25	VCO control voltage input	2.5V
26	Demodulator V_{DD}	5.8V
27	VCO control voltage input	5V
28	Mixer voltage reference	2.4V
29	DQPSK input	2.5V
30	Cosine channel offset compensator capacitor	2.5V
31	Cosine channel eye pattern output	2.5V
32	AGC peak detector storage capacitor	2.5V
33	Internal demodulator reference voltage buffered output	2.5V
34	Internal demodulator reference current output	2.5V
35	Internal demodulator reference voltage unbuffered output	2.5V
36	Demodulator V_{DD}	2.5V
37	Demodulator Vss	5V
38	Not connected	0V
39	Clock loop phase comparator output	2V
40	8.192MHz X-tal input	3.1V
41	8.192MHz X-tal output	2.5V
42	X-tal oscillator Vss	0V
43	Data input (Serial - 728 kbits/s)	2.5V
44	Data output (Serial - 728 kbits/s)	0V

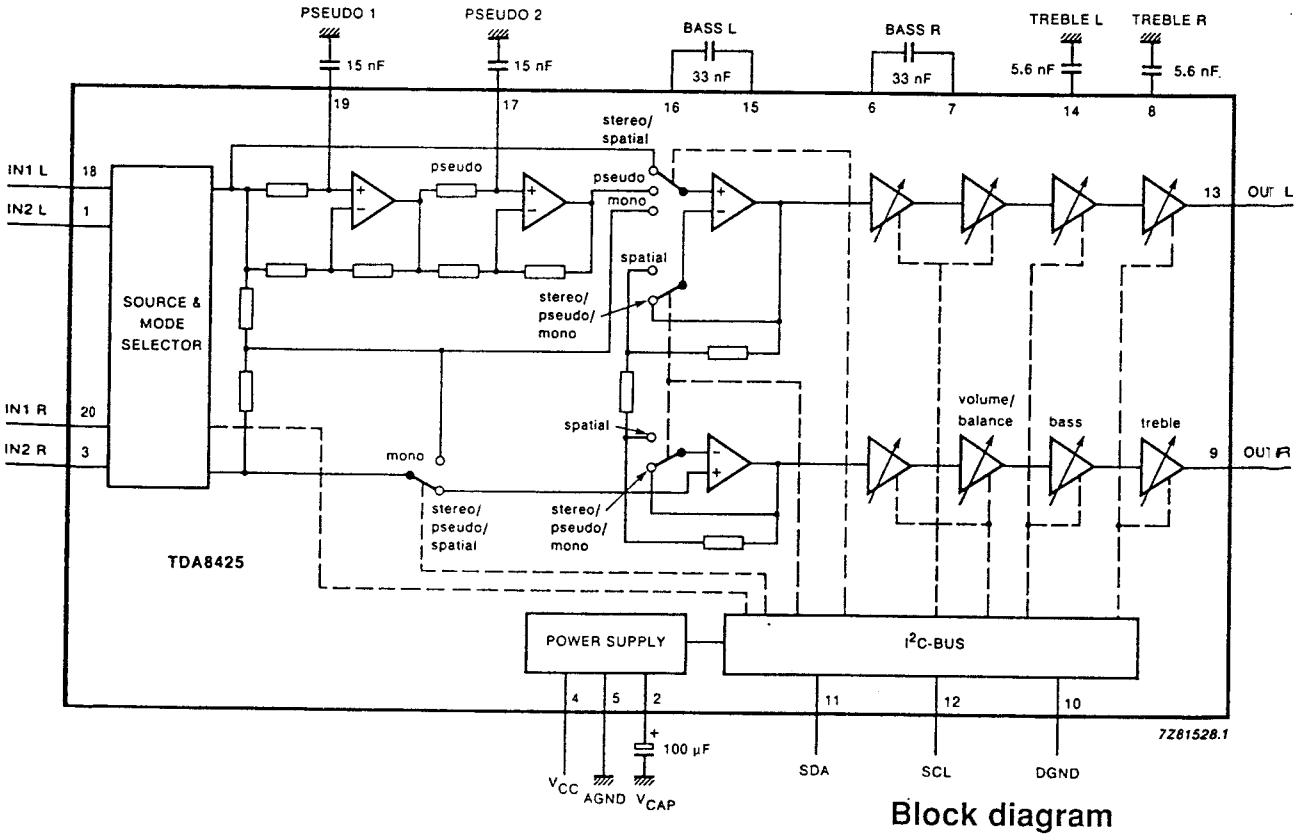
PINNING		PIN VOLTAGE
45	Clock output (728khz)	0.5V
46	Digital Vss	5V
47	Digital V_{DD}	5V
48	Data output (Serial - 728 kbits/s)	2.5V
49	Clock input (for I²C)	5Vpp
50	Data input/output (for I²C)	5Vpp
51	I²C address bit 0 input	0V
52	I² C bus bit (controled from PORT2)	5V



Block diagram of SAA7283

TDA 8425

PINNING		PIN VOLTAGE
1	Input 2 (Left)	5.83V
2	External decouplage capacitor (VCAP)	11.66V
3	Input 2 (Right)	5.84V
4	Supply voltage	11.76V
5	Ground	0V
6	Bass (Right)	5.84V
7	Bass (Right)	5.85V
8	Treble (Right)	5.85V
9	Output (Right)	5.85V
10	Ground	0V
11	Voltage Range	4.3V
12	Voltage Range	4.3V
13	Output (Left)	5.85V
14	Treble (Left)	5.85V
15	Bass (Left)	5.85V
16	Bass (Left)	5.84V
17	External capacitors 2	5.84V
18	Input 1 (left)	5.83V
19	External capacitor 1	5.83V
20	Input (Right)	5.83V



Block diagram

Vertical Deflection Circuit With TDA3653B

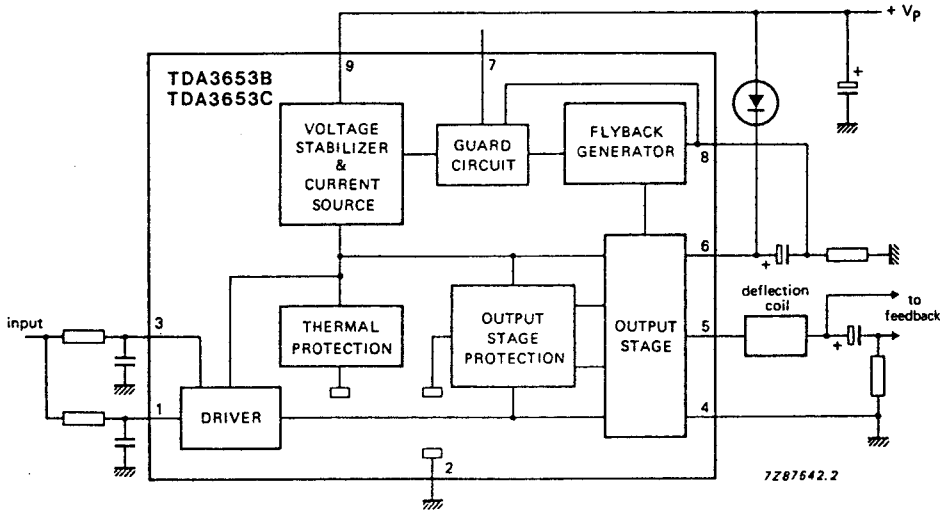
The TDA3653B is a vertical deflection output circuit for drive of various deflection systems with current up to 1.5 A peak to peak.

Features

- Driver
- Output Stage
- Thermal Protection
- Flyback Generator
- Voltage Stabilizer
- Guard Circuit

TDA 3653B

PINNING		PIN VOLTAGE
1	Output Stage Driver Input	1.2V and 2Vpp
2	Ground	-
3	Switching Circuit Input	1.2V and 2Vpp
4	Output Stage Ground	-
5	Output Voltage	13V and 45Vpp
6	Supply Voltage for the Output Stage	26V
7	DC Voltage produced by the Guard Circuit	-
8	Flyback Generator Output	8V
9	Supply Voltage	26V



Block diagram

Video Output Amplifier

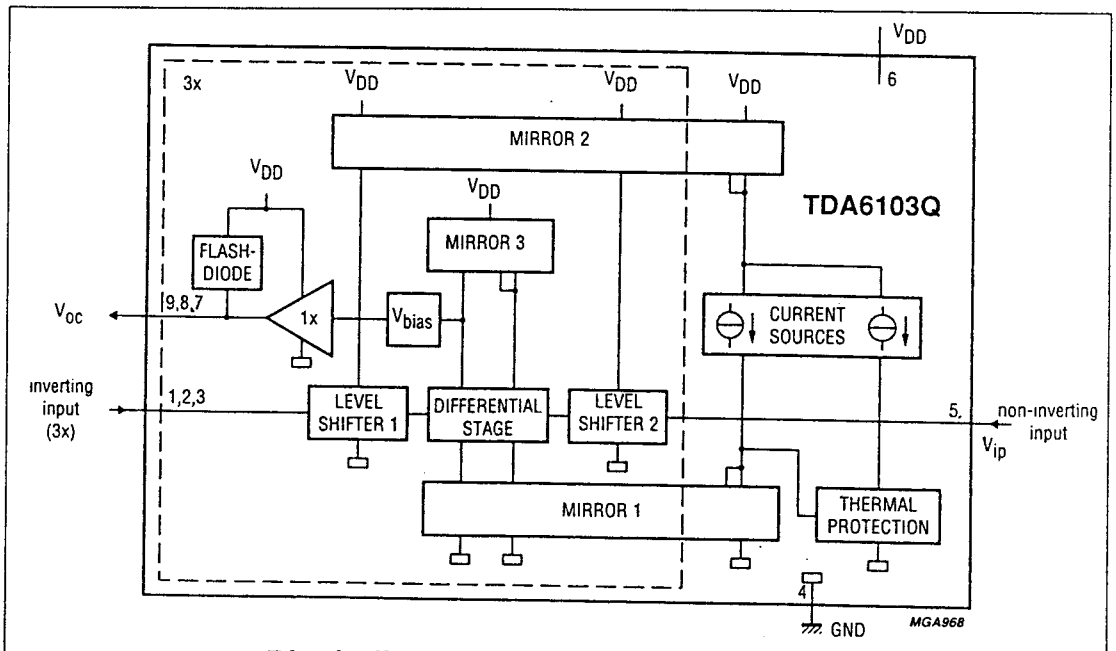
On CRT Board, TDA 6103Q is used as video output amplifier. The TDA 6103Q includes three video output amplifier intended to drive the three cathodes of color CRT.

Features

- High Bandwith : 7.5 Mhz typical
- High slew rate : 1600 V/us
- Simple application with a variety of color decoders
- Only one supply voltage needed
- Internal protection against positive appearing CRT flashover discharges
- One non-inverting input with a low minimum input voltage of 1V
- Thermal protection
- Controllable switch-off behavior

TDA 6103Q

PINNING		PIN VOLTAGE
1	Inverting input 1	:1.0Vpp
2	Inverting input 2	:1.0Vpp
3	Inverting input 3	:1.0Vpp
4	Ground, fin	: -
5	Non-inverting input	:1.8V
6	Supply voltage	:180V
7	Cathode output 3	: 90Vpp
8	Cathode output 2	: 90Vpp
9	Cathode output 1	: 90Vpp



Block diagram (one amplifier shown)

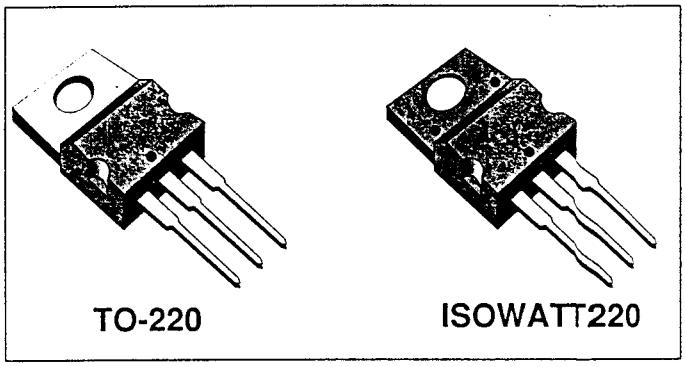
POWER MOS AND HORIZONTAL DRIVE TRANSISTORS SPECS

STH3N90 / STP3N90FI

N-CHANNEL ENHANCEMENT MODE POWER MOS TRANSISTOR

TYPE	V_{DSS}	$R_{DS(on)}$	I_D
STH5N90	900 V	< 2.4 Ω	5.3 A
STH5N90FI	900 V	< 2.4 Ω	3.5 A

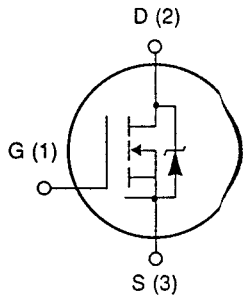
- Typical $R_{DS(on)}$ = 3.9 Ω
- Avalanche Rugged technology
- 100% avalanche tested
- Repetitive avalanche data at 100°C
- Low input capacitance
- Low gate charge
- Application oriented characterization



APPLICATIONS

- High current, high speed switching
- Switch mode power supplies (SMPS)
- Consumer and industrial lighting
- DC-AC inverters for welding equipment and uninterruptible power supply (UPS)

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		STH3N90	STH3N90FI	
V_{DS}	Drain-source Voltage (V_{GS} = 0)	900		V
V_{DGR}	Drain-gate Voltage (R_{GS} = 20 kΩ)	900		V
V_{GS}	Gate-source Voltage	± 20		V
I_D	Drain Current (continuous) at T_c = 25 °C	3.2	1.9	A
I_D	Drain Current (continuous) at T_c = 100 °C	2	1.2	A
I_{DM} (•)	Drain Current (pulsed)	13	13	A
P_{tot}	Total Dissipation at T_c = 25 °C	100	40	W
	Derating Factor	0.8	0.32	W / ° C
V_{ISO}	Insulation Withstand Voltage (DC)	-	2000	V
Tstg	Storage Temperature	-65 to 150		° C
T_j	Max. Operating Junction Temperature	150		° C

(•) *Pulse width limited by safe operating area*

THERMAL DATA

			TO-218	ISOWATT218	
$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	1.25	3.12	°C/W
$R_{thj\text{-}amb}$	Thermal Resistance Junction-ambient	Max	62.5		°C/W
$R_{thc\text{-}sink}$	Thermal Resistance Case-sink	Typ	0.5		°C/W
T_l	Maximum Lead Temperature For Soldering Purpose		300		°C

AVALANCHE CHARACTERISTICS

Symbol	Parameter	Max Value	Unit
I_{AR}	Avalanche Current, Repetitive or Not-Repetitive (pulse width limited by T_j max, $\delta < 1\%$)	3.2	A
E_{AS}	Single Pulse Avalanche Energy (starting Tj = 25 °C, $I_D = I_{AR}$, V_{DD} = 50 V)	160	mJ
E_{AR}	Repetitive Avalanche Energy (pulse width limited by T_j max, $\delta < 1\%$)	4.2	mJ
I_{AR}	Avalanche Current, Repetitive or Not-Repetitive (T_c = 100 °C, pulse width limited by T_j max, $\delta < 1\%$)	2	A

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

OFF

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	Drain-source Breakdown Voltage	I_D = 250 µA V_{GS} = 0	900			V
I_{DSS}	Zero Gate Voltage Drain Current (V_{GS} = 0)	V_{DS} = Max Rating V_{DS} = Max Rating x 0.8 T_c = 125 °C			250 1000	µA µA
I_{GSS}	Gate-body Leakage Current (V_{DS} = 0)	V_{GS} = ± 20 V			± 100	nA

ON (*)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS} I_D = 250 µA	2	3	4	V
$R_{DS(on)}$	Static Drain-source On Resistance	V_{GS} = 10V I_D = 1.7 A V_{GS} = 10V I_D = 1.7 A T_c = 100 °C		3.9	4.5 9	Ω Ω
$I_{D(on)}$	On State Drain Current	$V_{DS} > I_{D(on)} \times R_{DS(on)max}$ VGS = 10 V	3.2			A

DYNAMIC

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
g_{fs} (*)	Forward Transconductance	$V_{DS} > I_{D(on)} \times R_{DS(on)max}$ I_D = 1.7 A	1	3.5		S
C_{iss} C_{oss} C_{rss}	Input Capacitance Output Capacitance Reverse Transfer Capacitance	V_{DS} = 25 V f = 1 MHz V_{GS} = 0		650 82 28	850 105 40	pF pF pF

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$t_{d(on)}$	Turn-on Time	V_{DD} = 30 V I_D =2.1 A			50	ns
t_r	Rise Time	R_G = 50 Ω V_{GS} = 10 V (see test circuit, figure 3)		85	105	ns
$(di/dt)_{on}$	Turn-on Current Slope	V_{DD} = 640 V I_D = 3 A R_G = 50 Ω V_{GS} = 10 V (see test circuit, figure 5)		170		A/µs
Q_g	Total Gate Charge	V_{DD} = 400V I_D = 3 A V_{GS} = 10 V		42	55	nC
Q_{gs}	Gate-Source Charge			6		nC
Q_{gd}	Gate-Drain Charge			17		nC

SWITCHING OFF

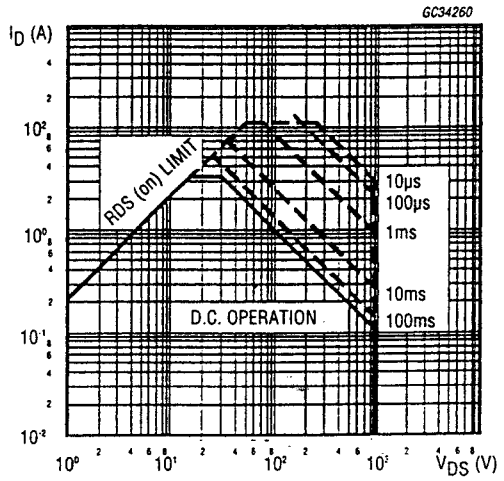
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$t_{r(Voff)}$	Off-voltage Rise Time	V_{DD} = 640 V I_D = 3 A		95	120	ns
t_f	Fall Time	R_G = 50 Ω V_{GS} = 10 V		20	25	ns
t_c	Cross-over Time	(see test circuit, figure 5)		120	165	ns

SOURCE DRAIN DIODE

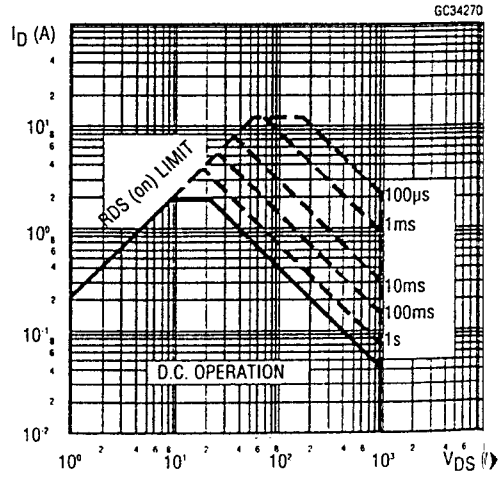
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{SD}	Source-drain Current				3.2	A
I_{SDM} (•)	Source-drain Current (pulsed)				1.3	A
V_{SD} (*)	Forward On Voltage	I_{SD} = 3.2 A V_{GS} = 0			2	V
t_{rr}	Reverse Recovery Time	I_{SD} =3 A di/dt = 100 A/µs V_{DD} = 80 V T_j = 150°C		700		ns
Q_{rr}	Reverse Recovery Charge	(see test circuit, figure 5)		8.8		µC
I_{RRM}	Reverse Recovery Current			25		A

(*) *Pulsed: Pulse duration = 300 µs, duty cycle 15%* (•) *Pulse width limited by safe operating area*

Safe Operating Areas For TO-218



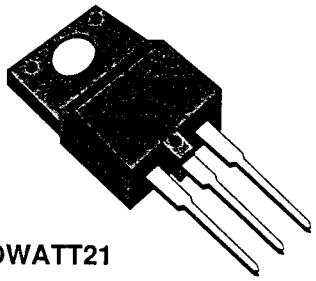
Safe Operating Areas For ISOWATT218



BUH515D

CRT HORIZONTAL DEFLECTION
HIGH VOLTAGE NPN FASTSWITCHING TRANSISTOR

- High breakdown voltage capability
- Fully insulated package for easy mounting
- Low saturation voltage
- High switching speed
- Complete characterization of power losses and switching times as a function of negative base current for optimum drive

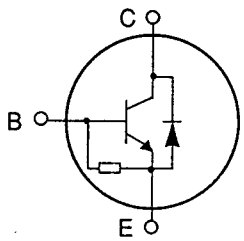


ISOWATT21

APPLICATIONS:

- Horizontal deflection stage in standard and high resolution dis-plays for TV's and monitors

INTERNAL SCEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage (I_E = 0)	1500	V
V_{CE0}	Collector-Emitter Voltage (I_B = 0)	700	V
V_{EB0}	Emitter-Base Voltage (I_C = 0)	5	V
I_C	Collector Current	8	A
I_{CM}	Collector Peak Current (t_p < 5 ms)	15	A
I_B	Base Current	5	A
I_{BM}	Base Peak Current (t_p < 5 ms)	8	A
P_{tot}	Total Dissipation at Tc = 25°C	60	W
T_{stg}	Storage Temperature	-65 to 150	°C
T_j	Max. Operating Junction Temperature	150	°C

BUH515

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	2.08	°C/W

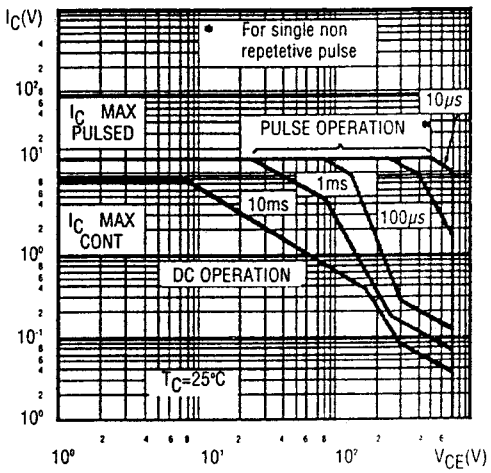
ELECTRICAL CHARACTERISTICS (Tcase = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current (V_{BE} = 0)	V_{CE} = 1500 V V_{CE} = 1500 V T_j = 125°C			1 2	mA mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			300	mA
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 5 A I_B = 1.25 A			1.5	V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = 5 A I_B = 1.25 A			1.3	V
h_{FE}*	DC Current Gain	I_c = 5 A V_{CE} = 5 V I_c = 5 A V_{CE} = 5 V T_J= 100 °C	5 3			
t_s t_f	RESISTIVE LOAD Storage Time Fall Time	Vcc = 400 V I_C = 5 A I_{B1} = 1.25 A I_{B2} = 2.5 A		2.4 170	3.6 260	µs ns
t_s t_f	INDUCTIVE LOAD Storage Time Fall Time	I_c = 5 A f = 15625 Hz I_{B1} = 1.25 A I_{B2} = 2.5 A $V_{ceflyback} = 1050 \sin \left\{ \frac{\pi}{10} 10^6 \right\} t$ V		3.5 4.50		µs ns
V_f	Diode Forward Voltage	I_F = 5 A			2	V

* *Pulsed: Pulse duration = 300 µs, duty cycle 1.5%*

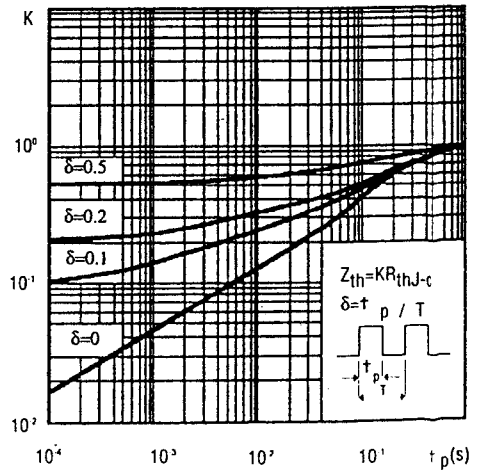
Safe operating Areas

GC32910

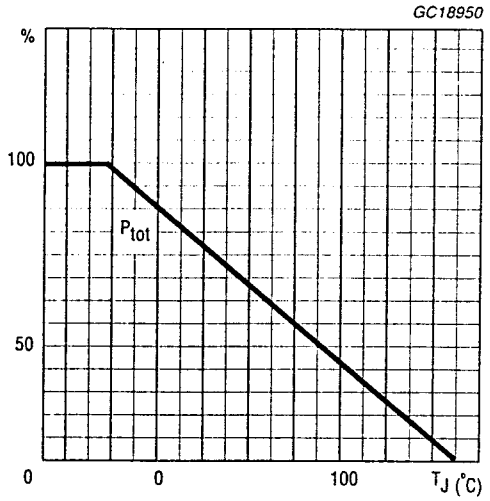


Thermal Impedance

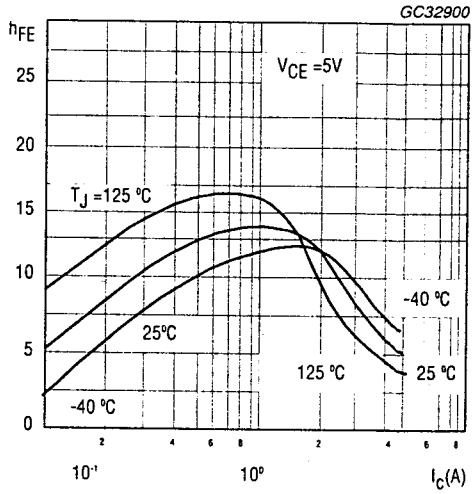
GC32710



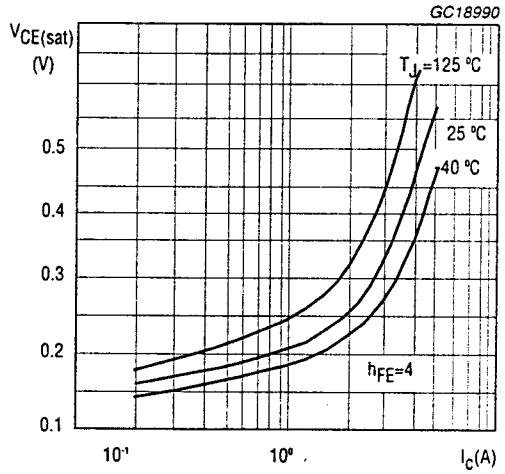
Derating Curves



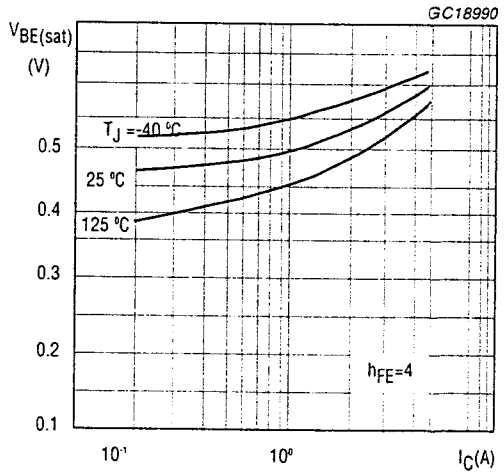
DC Current Gain



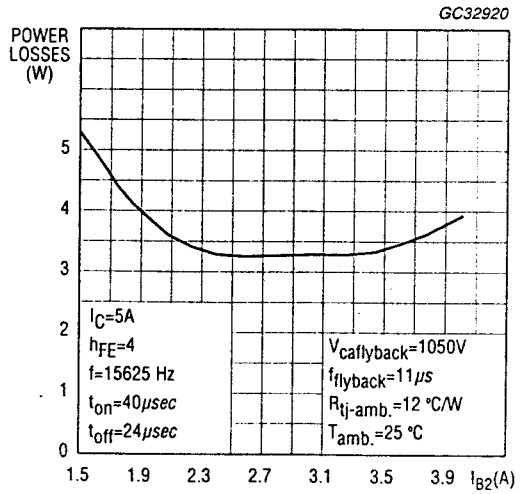
Collector-Emitter Saturation Voltage



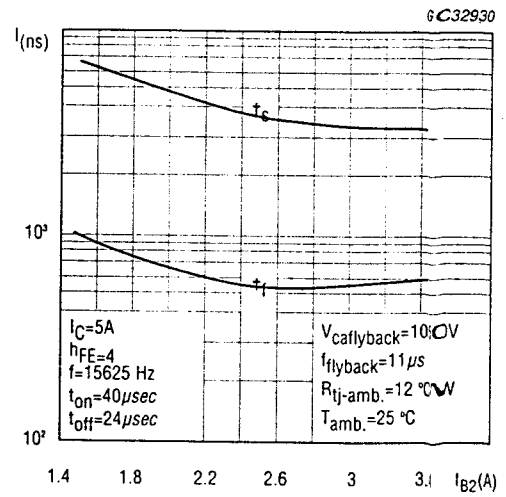
Base-Emitter Saturation Voltage



Power Losses at 16 KHz



Switching Time Inductive Load 16 KHz



REV.004

PUSH THROUGH CHASSIS PART LIST

COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
FILTER,CERAMIC	5.5 MHz TPS 5.5 MB	MAIN	B/G	FI102	037730007071
FILTER,SAW	SAF 38.9MS51P, K2950	MAIN	B/G-D/K	FI101	037730007741
ISOLATION BEAD		MAIN	BASIC	IC3	005051084631
ISOLATION BEAD		MAIN	BASIC	Q1	005051084631
ISOLATION RUBBER		MAIN	BASIC	IC3	005051084621
ISOLATION RUBBER		MAIN	BASIC	Q1	005051084621
CAP.AL.ELECT.	100 UF 20% 400 V	MAIN	BASIC	C5	042719901071
CAP.CERAMIC	1 NF +80-20 % 50 VF	MAIN	BASIC	C121	040070041021
CAP.CERAMIC	1 NF +80-20 % 50 V F	MAIN	BASIC	C122	040070041021
CAP.CERAMIC	1 NF +80-20% 25 VF	MAIN	BASIC	C199	040070021021
CAP.CERAMIC	1 NF +80-20% 50 VF	MAIN	BASIC	C117	040070041021
CAP.CERAMIC	10 NF +80-20% 50 VF	MAIN	BASIC	C129	040070041031
CAP.CERAMIC	10 NF +80-20% 50 VF	MAIN	BASIC	C27	040070041031
CAP.CERAMIC	10 PF 5% 50 V CH	MAIN	BASIC	C155	040032041001
CAP.CERAMIC	10 NF +80-20% 50 V	MAIN	BASIC	C130	040070041031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C120	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C123	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C124	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C126	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C138	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C153	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C321	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C325	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C36	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C38	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C40	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C401	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C42	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	BASIC	C624	040070021031
CAP.CERAMIC	100 PF 20% 1 KV BN	MAIN	BASIC	C8	040050151011
CAP.CERAMIC	100 PF 10% 500 VB	MAIN	BASIC	C614	040040141011
CAP.CERAMIC	100 NF +80-20% 25 V	MAIN	BASIC	C318	040070021031
CAP.CERAMIC	1000 PF 10% 1 KV BN	MAIN	BASIC	C30	040046151021
CAP.CERAMIC	1000 PF 10% 1 KV BN	MAIN	BASIC	C33	040046151021
CAP.CERAMIC	1000 PF 10% 1 KV BN	MAIN	BASIC	C611	040046151021
CAP.CERAMIC	1000 PF 10% 2 KV BN	MAIN	BASIC	C7	040040171021
CAP.CERAMIC	1000 PF 10% 50 VB	MAIN	BASIC	C620	040040041021
CAP.CERAMIC	18 PF 5% 50 VCH	MAIN	BASIC	C127	040032041801
CAP.CERAMIC	18 PF 5% 50 VCH	MAIN	BASIC	C315	040032041801
CAP.CERAMIC	18 PF 5% 50 VCH	MAIN	BASIC	C316	040032041801
CAP.CERAMIC	2.2 NF +80-20% 50 VF	MAIN	BASIC	C601	040071022221
CAP.CERAMIC	22 NF 10% 500 VB	MAIN	BASIC	C613	040040502221
CAP.CERAMIC	22 NF +80-20% 50 VF	MAIN	BASIC	C135	040070022231
CAP.CERAMIC	22 NF +80-20% 50 VF	MAIN	BASIC	C137	040070022231
CAP.CERAMIC	22 NF +80-20% 50 VF	MAIN	BASIC	C142	040070022231
CAP.CERAMIC	22 NF +80-20% 50 VF	MAIN	BASIC	C301	040070022231
CAP.CERAMIC	22 PF 10% 50 VCH	MAIN	BASIC	C102	040042022201
CAP.CERAMIC	22 PF 10% 50 VCH	MAIN	BASIC	C310	040042022201
CAP.CERAMIC	22 PF 10% 50 VCH	MAIN	BASIC	C311	040042022201
CAP.CERAMIC	22 PF 10% 50 VCH	MAIN	BASIC	C312	040042022201
CAP.CERAMIC	22 PF 10% 50 VCH	MAIN	BASIC	C313	040042022201
CAP.CERAMIC	220 PF 10% 50 VSL	MAIN	BASIC	C319	040040022211
CAP.CERAMIC	2200 PF 10% 1 KV BN	MAIN	BASIC	C3	040040122211
CAP.CERAMIC	2200 PF 10% 1 KV BN	MAIN	BASIC	C4	040040122211
CAP.CERAMIC	2200 PF 10% 1 KV BN	MAIN	BASIC	C603	040040122211

REV.004

PUSH THROUGH CHASSIS PART LIST

COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
CAP.CERAMIC	470 PF 10% 1 KV BN	MAIN	BASIC	C24	
CAP.CERAMIC	470 PF 10% 1 KV BN	MAIN	BASIC	C28	
CAP.CERAMIC	470 PF 10% 2 KV BN	MAIN	BASIC	C602	040040174711
CAP.CERAMIC	470 PF 10% 100 VSL	MAIN	BASIC	C623	040040044711
CAP.CERAMIC	4700 PF 10% 50 VB	MAIN	BASIC	C133	040040044721
CAP.CERAMIC	4700 PF 10% 50 VB	MAIN	BASIC	C621	040040044721
CAP.CERAMIC	4700 PF 10% 50 VB	MAIN	BASIC	C622	040040044721
CAP.CERAMIC	680 PF 10% 1 KV BN	MAIN	BASIC	C604	040040156811
CAP.CERAMIC DISK	470 PF 10% 1 KV BN	MAIN	BASIC	C15	
CAP.CERAMIC SAFETY	2200 PF 10% 4 KV MX	MAIN	BASIC	C14	040040202221
CAP.ELECT.	1 µF 20% 16 V	MAIN	BASIC	C160	042416161051
CAP.ELECT.	1 µF 20% 16 V	MAIN	BASIC	C305	042416161051
CAP.ELECT.	1 µF 20% 16 V	MAIN	BASIC	C309	042416161051
CAP.ELECT.	1 µF 20% 25 V	MAIN	BASIC	C132	042416251071
CAP.ELECT.	1 µF 20% 250 V	MAIN	BASIC	C615	042414861051
CAP.ELECT.	1 µF 20% 50 V	MAIN	BASIC	C12	042416501051
CAP.ELECT.	1 µF 20% 50 V	MAIN	BASIC	C625	042416501051
CAP.ELECT.	1 µF 20% 16 V	MAIN	BASIC	C32	042416251071
CAP.ELECT.	10 µF 20% 16 V	MAIN	BASIC	C104	042446161061
CAP.ELECT.	10 µF 20% 16 V	MAIN	BASIC	C107	042446161061
CAP.ELECT.	10 µF 20% 16 V	MAIN	BASIC	C109	042446161061
CAP.ELECT.	10 µF 20% 16 V	MAIN	BASIC	C128	042446161061
CAP.ELECT.	10 µF 20% 16 V	MAIN	BASIC	C140	042446161061
CAP.ELECT.	10 µF 20% 16 V	MAIN	BASIC	C150	042446161061
CAP.ELECT.	10 µF 20% 16 V	MAIN	BASIC	C154	042446161061
CAP.ELECT.	10 µF 20% 16 V	MAIN	BASIC	C306	042446161061
CAP.ELECT.	10 µF 20% 16 V	MAIN	BASIC	C307	042446161061
CAP.ELECT.	10 µF 20% 250 V	MAIN	BASIC	C605	042440861061
CAP.ELECT.	100 µF 20% 16 V	MAIN	BASIC	C320	042140161071
CAP.ELECT.	100 µF 20% 63 V	MAIN	BASIC	C627	042414631071
CAP.ELECT.	1000 µF 20% 25 V	MAIN	BASIC	C34	042440251081
CAP.ELECT.	1000 µF 20% 35 V	MAIN	BASIC	C626	042416351081
CAP.ELECT.	2.2 µF 20% 16 V	MAIN	BASIC	C141	042414162251
CAP.ELECT.	2.2 µF 20% 16 V	MAIN	BASIC	C308	042414162251
CAP.ELECT.	2.2 µF 20% 25 V	MAIN	BASIC	C136	042412522011
CAP.ELECT.	22 µF 20% 50 V	MAIN	BASIC	C26	042416502261
CAP.ELECT.	220 µF 20% 16 V	MAIN	BASIC	C29	042417162271
CAP.ELECT.	220 µF 20% 16 V	MAIN	BASIC	C31	042417162271
CAP.ELECT.	220 µF 20% 16 V	MAIN	BASIC	C39	042417162271
CAP.ELECT.	220 µF 20% 50 V	MAIN	BASIC	C628	042449502271
CAP.ELECT.	33 µF 20% 16 V	MAIN	BASIC	C156	042417163361
CAP.ELECT.	4.7 µF 20% 16 V	MAIN	BASIC	C146	042446164751
CAP.ELECT.	4.7 µF 20% 16 V	MAIN	BASIC	C192	042446164751
CAP.ELECT.	4.7 µF 20% 16 V	MAIN	BASIC	C322	042446164751
CAP.ELECT.	4.7 µF 20% 16 V	MAIN	BASIC	C656	042446164751
CAP.ELECT.	47 µF 20% 16 V	MAIN	BASIC	C11	042447164761
CAP.ELECT.	47 µF 20% 16 V	MAIN	BASIC	C35	042447164761
CAP.ELECT.	47 µF 20% 160 V	MAIN	BASIC	C25	042419834761
CAP.ELECT.	470 µF 20% 16 V	MAIN	BASIC	C37	042140164771
CAP.ELECT.	470 µF 20% 35 V	MAIN	BASIC	C612	042440354771
CAP.ELECT.	470 µF 20% 25 V	MAIN	BASIC	C41	042449254771
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	BASIC	C105	620013081041
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	BASIC	C108	620013081041
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	BASIC	C110	620013081041
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	BASIC	C111	620013081041

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COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	BASIC	C134	620013081041
CAP.M.POLYESTER	0.1 µF 10% 50 V	MAIN	BASIC	C303	621004001041
CAP.M.POLYESTER	0.22 µF 10% 50 V	MAIN	BASIC	C10	621004002241
CAP.M.POLYESTER	47 NF 10% 100 V	MAIN	BASIC	C609	620004014731
CAP.M.POLYPROPYLENE	0.1 µF 20% 250 VAC	MAIN	BASIC	C1	621005051041
CAP.M.POLYPROPYLENE	0.1 µF 20% 250 VAC	MAIN	BASIC	C2	621005051041
CAP.M.POLYPROPYLENE	0.33 µF 5% 63 V	MAIN	BASIC	C302	620004083341
CAP.M.POLYPROPYLENE	0.33 µF 5% 63 V	MAIN	BASIC	C304	620004083341
CAP.M.POLYPROPYLENE	470 NF 5% 250 V	MAIN	BASIC	C606	620013054741
CAP.M.POLYPROPYLENE	470 NF 5% 250 V	MAIN	BASIC	C608	620013054741
CAP.M.POLYPROPYLENE	6.8 NF 2.5% 1600 V	MAIN	BASIC	C607	619323776821
CAP.POLYESTER	0.0033 µF 10% 50 V	MAIN	BASIC	C13	621004003321
CAP.POLYESTER	0.0047 µF 10% 50 V	MAIN	BASIC	C131	618024004721
CAP.POLYESTER	0.0047 µF 10% 63 V	MAIN	BASIC	C125	618024074701
CAP.POLYESTER	0.0068 µF 10% 50 V	MAIN	BASIC	C9	618014006821
CAP.POLYESTER	0.010 µF 10% 50 V	MAIN	BASIC	C113	618004001031
CAP.POLYESTER	0.033 µF 5% 630 V	MAIN	BASIC	C6	621003133331
COIL	50 µH LINEARITY	MAIN	BASIC	L602	608980004051
COIL, AX.FIXED	1 UH J	MAIN	BASIC	L104	608980000111
COIL, AX.FIXED	10 UH J	MAIN	BASIC	L101	608000000021
COIL, AX.FIXED	10 UH J	MAIN	BASIC	L105	608000000021
COIL, AX.FIXED	12 UH J	MAIN	BASIC	L301	608980000101
COIL, AX.FIXED	3.3 UH J	MAIN	BASIC	J1046	608000000071
COIL, AX.FIXED	6.8 UH J	MAIN	BASIC	L102	608080000161
COIL,CHOKE	150 UH K	MAIN	BASIC	L20	608380002361
COIL,TOKO	38.9MHz (T-SW-2099)	MAIN	BASIC	T101	608280001881
CONNECTOR 2P	5279-02A (VERT)	MAIN	BASIC	CN602	075030211001
CONNECTOR 2P	5283-02A (HORIZ)	MAIN	BASIC	CN601	075030261001
CONNECTOR 2P	5287-02A(DEGAUS)	MAIN	BASIC	CN1	075100211781
CONNECTOR 4P	4P (3P)	MAIN	BASIC	CN603	075030411011
CRYSTAL	10.00 MHz	MAIN	BASIC	EM301	049030000151
CRYSTAL,QUARTZ	4.433619 MHz	MAIN	BASIC	EM102	049030000501
DIODE	1N4007	MAIN	BASIC	D 1	048321423201
DIODE	1N4007	MAIN	BASIC	D 2	048321423201
DIODE	1N4007	MAIN	BASIC	D 3	048321423201
DIODE	1N4007	MAIN	BASIC	D4	048321423201
DIODE	1N4148	MAIN	BASIC	D107	048210411001
DIODE	1N4148	MAIN	BASIC	D303	048210411001
DIODE	1N4148	MAIN	BASIC	D306	048210411001
DIODE	1N4148	MAIN	BASIC	D310	048210411001
DIODE	1N4148	MAIN	BASIC	D311	048210411001
DIODE	1N4148	MAIN	BASIC	D313	048210411001
DIODE	1N4148	MAIN	BASIC	D316	048210411001
DIODE	1N4148	MAIN	BASIC	D325	048210411001
DIODE	1N4148	MAIN	BASIC	D390	048210411001
DIODE	1N4148	MAIN	BASIC	D391	048210411001
DIODE	1N4148	MAIN	BASIC	D393	048210411001
DIODE	1N4148	MAIN	BASIC		048210411001
DIODE	BYD 33D	MAIN	BASIC	D6	048000000011
DIODE	BYD 33D	MAIN	BASIC	D610	048000000011
DIODE	BYD 33D	MAIN	BASIC	D7	048000000011
DIODE	BYD 33D	MAIN	BASIC	D8	048000000011
DIODE	BYV 95C	MAIN	BASIC	D 20	048000000021
DIODE	BYV 95C	MAIN	BASIC	D 21	048000000021
DIODE	BYV 95C	MAIN	BASIC	D 22	048000000021

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COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
DIODE	BYV 95C	MAIN	BASIC	D 23	048000000021
DIODE	BYV 95C	MAIN	BASIC	D5	048000000021
DIODE	BYV 95C	MAIN	BASIC	D601	048000000021
DIODE	BYV 95C	MAIN	BASIC	D602	048000000021
DIODE	BYV 95C	MAIN	BASIC	D603	048000000021
DIODE, LED	5 MM	MAIN	BASIC	LED301	048773809001
DIODE,TEMP.COMP.ZENER	ZTK33B	MAIN	BASIC	ZD2	048540733021
DIODE,ZENER	6.2 V	MAIN	BASIC	ZD1	048542613621
DIODE,ZENER	9.1 V 0.5 W 5%	MAIN	BASIC	ZD601	048548637001
FBT	20 / 21 SAMSUNG	MAIN	BASIC	TR601	604200000221
FILTER LINE	2*74 MH	MAIN	BASIC	EM1	608980003721
FUSE,SLOW	2 A / 250 V	MAIN	BASIC	F01	067310001821
HARNESS ASS'Y 2P 1 CNN	BLACK / WHITE (DEGAUSS.) 35 CM H2	MAIN	BASIC	CN1	002021000301
HARNESS ASS'Y 2P 1 CNN	BROWN / BLACK (VERT.) 40 CM H1	MAIN	BASIC	CN602	002344500021
HARNESS ASS'Y 2P 1 CNN	RED/WHITE (HORZ..) 40 CM H3	MAIN	BASIC	CN601	002344500031
IC	L7805 5V 1A	MAIN	BASIC	IC2	045238103081
IC	L7808 8V 1A	MAIN	BASIC	IC4	045018113181
IC	LM317	MAIN	BASIC	IC3	045238103051
IC	ST24C02B1	MAIN	BASIC	IC302	045101070261
IC	TDA 3653	MAIN	BASIC	IC601	045000001021
IC	TDA 4605	MAIN	BASIC	IC1	045000000761
IC	U3661	MAIN	BASIC	IC102	045101070271
POSISTOR	PTH451A102BG180N29	MAIN	BASIC	EM2	034710303631
PREAMPLIFIER	TFMS 1360	MAIN	BASIC	EM302	609330001131
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	BASIC	R120	030140610211
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	BASIC	R131	030140610211
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	BASIC	R145	030140610211
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	BASIC	R161	030140610211
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	BASIC	R312	030140610211
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	BASIC	R323	030140610211
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	BASIC	R336	030140610211
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	BASIC	R635	030140610211
RES.CAR.FILM	1 M 5% 1/6 W	MAIN	BASIC	R140	030140610501
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	BASIC	R333	030140610211
RES.CAR.FILM	1.5 K 5% 1/6 W	MAIN	BASIC	R335	030140615211
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R252	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R11	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R147	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R152	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R160	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R30	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R301	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R310	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R321	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R322	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R610	030140610311
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	BASIC	R621	030140610311
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	BASIC	R318	030140610411
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	BASIC	R127	030140610411
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	BASIC	R315	030140610411
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	BASIC	R326	030140610411
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	BASIC	R360	030140610411
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	BASIC	R132	030140610411
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	BASIC	R104	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	BASIC	R121	030140610101

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COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	BASIC	R122	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	BASIC	R123	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	BASIC	R303	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	BASIC	R338	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	BASIC	R339	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	BASIC	R340	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	BASIC	R343	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	BASIC	R344	030140610101
RES.CAR.FILM	12 K 5% 1/6 W	MAIN	BASIC	R117	030140612311
RES.CAR.FILM	12 K 5% 1/6 W	MAIN	BASIC	R139	030140612311
RES.CAR.FILM	12 K 5% 1/6 W	MAIN	BASIC	R307	030140612311
RES.CAR.FILM	12 K 5% 1/6 W	MAIN	BASIC	R390	030140612311
RES.CAR.FILM	12 K 5% 1/6 W	MAIN	BASIC	R391	030140612311
RES.CAR.FILM	120 R 5% 1/6 W	MAIN	BASIC	R103	030140612121
RES.CAR.FILM	15 K 5% 1/6 W	MAIN	BASIC	R305	030140615311
RES.CAR.FILM	15 K 5% 1/6 W	MAIN	BASIC	R306	030140615311
RES.CAR.FILM	15 K 5% 1/6 W	MAIN	BASIC	R633	030140615311
RES.CAR.FILM	18 K 5% 1/6 W	MAIN	BASIC	R153	
RES.CAR.FILM	180 R 5% 1/6 W	MAIN	BASIC	R105	030140618121
RES.CAR.FILM	180 R 5% 1/6 W	MAIN	BASIC	R107	030140618121
RES.CAR.FILM	2.2 K 5% 1/6 W	MAIN	BASIC	R108	030140622221
RES.CAR.FILM	2.2 K 5% 1/6 W	MAIN	BASIC	R623	030140622221
RES.CAR.FILM	2.2 K 5% 1/6 W	MAIN	BASIC	R629	030140622221
RES.CAR.FILM	2.2 K 5% 1/6 W	MAIN	BASIC	R337	030140622221
RES.CAR.FILM	2.2 M 5% 1/6 W	MAIN	BASIC	R308	030140622511
RES.CAR.FILM	2.7 K 5% 1/6 W	MAIN	BASIC	R632	030140627211
RES.CAR.FILM	22 K 5% 1/6 W	MAIN	BASIC	R146	030140622311
RES.CAR.FILM	22 K 5% 1/6 W	MAIN	BASIC	R346	030140622311
RES.CAR.FILM	220 K 5% 1/2 W	MAIN	BASIC	R5	030050622410
RES.CAR.FILM	220 K 5% 1/6 W	MAIN	BASIC	R325	030140622411
RES.CAR.FILM	220 R 5% 1/6 W	MAIN	BASIC	R6	030140622101
RES.CAR.FILM	27 K 5% 1/6 W	MAIN	BASIC	R317	030140627311
RES.CAR.FILM	27 K 5% 1/6 W	MAIN	BASIC	R345	030140627311
RES.CAR.FILM	270 R 5% 1/6W	MAIN	BASIC	R101	030140627111
RES.CAR.FILM	3.3 K 5% 1/6 W	MAIN	BASIC	R28	030140633201
RES.CAR.FILM	3.3 K 5% 1/6 W	MAIN	BASIC	R302	030140633201
RES.CAR.FILM	3.3 K 5% 1/6 W	MAIN	BASIC	R341	030140633201
RES.CAR.FILM	3.3 K 5% 1/6 W	MAIN	BASIC	R342	030140633201
RES.CAR.FILM	3.3 K 5% 1/6 W	MAIN	BASIC	R7	030140633201
RES.CAR.FILM	3.9 K 5% 1/6 W	MAIN	BASIC	R620	030140639211
RES.CAR.FILM	330 K 5% 1/2 W	MAIN	BASIC	R4	030050633411
RES.CAR.FILM	330 K 5% 1/6 W	MAIN	BASIC	R143	030140633411
RES.CAR.FILM	330 R 5% 1/6 W	MAIN	BASIC	R349	
RES.CAR.FILM	39 K 5% 1/6 W	MAIN	BASIC	R613	
RES.CAR.FILM	39 K 5% 1/6 W	MAIN	BASIC	R311	030140639301
RES.CAR.FILM	39 R 5% 1/2 W	MAIN	BASIC	R605	030140639021
RES.CAR.FILM	390 R 5% 1/6 W	MAIN	BASIC	R27	030140639111
RES.CAR.FILM	390 R 5% 1/6 W	MAIN	BASIC	R352	030020639131
RES.CAR.FILM	4.7 K 5% 1/4 W	MAIN	BASIC	R608	
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	BASIC	R353	030140647211
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	BASIC	R31	030140647211
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	BASIC	R316	030140647211
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	BASIC	R601	030140647211
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	BASIC	R116	030140647211
RES.CAR.FILM	47 K 5% 1/6 W	MAIN	BASIC	R136	030140647311

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COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
RES.CAR.FILM	47 K 5% 1/6 W	MAIN	BASIC	R404	030140647311
RES.CAR.FILM	47 K 5% 1/6 W	MAIN	BASIC	R631	030140647311
RES.CAR.FILM	47 K 5% 1/6 W	MAIN	BASIC	R118	030140647311
RES.CAR.FILM	47 R 5% 1/6 W	MAIN	BASIC	R8	030140647011
RES.CAR.FILM	47 R 5% 1/6 W	MAIN	BASIC	R9	030140647011
RES.CAR.FILM	470 K 5% 1/6 W	MAIN	BASIC	R138	030140647411
RES.CAR.FILM	5.1 R 5% 1/6 W	MAIN	BASIC	R10	030140650911
RES.CAR.FILM	5.6 K 5% 1/6 W	MAIN	BASIC	R102	030140656211
RES.CAR.FILM	5.6 K 5% 1/6 W	MAIN	BASIC	R12	030140656211
RES.CAR.FILM	5.6 K 5% 1/6 W	MAIN	BASIC	R144	030140656211
RES.CAR.FILM	5.6 K 5% 1/6 W	MAIN	BASIC	R304	030140656211
RES.CAR.FILM	8.2 K 5% 1/6 W	MAIN	BASIC	R115	030140682211
RES.CAR.FILM	8.2 K 5% 1/6 W	MAIN	BASIC	R612	030140682211
RES.CAR.FILM	8.2 K 5% 1/6 W	MAIN	BASIC	R630	030140682211
RES.CAR.FILM	82 K 5% 1/6 W	MAIN	BASIC	R222	030140682321
RES.CAR.FILM	82 R 5% 1/6 W	MAIN	BASIC	R602	
RES.CAR.FILMNON FLAMMABLE	2.2 R 5% 1/6 W	MAIN	BASIC	R154	030140622911
RES.CAR.FILMNON FLAMMABLE	4.7 R 5% 1/6 W	MAIN	BASIC	R137	030140647921
RES.CER.INSULATED	2 K 10% 5 W	MAIN	BASIC	R603	032053620211
RES.CER.INSULATED	5.6 R 10% 5 W	MAIN	BASIC	R1	032053656921
RES.COAT INSULATED	8M2 RCT 1 W	MAIN	BASIC	R13	030103682521
RES.M.FILM FUSING	0.22 R 5% 1 /4W	MAIN	BASIC	R21	
RES.M.FILM FUSING	0.22 R 5% 1 W	MAIN	BASIC	R20	030105622811
RES.M.FILM FUSING	0.22 R 5% 1 W	MAIN	BASIC	R22	030105622811
RES.M.FILM FUSING	0.22 R 5% 1 W	MAIN	BASIC	R611	030105622811
RES.M.FILM FUSING	0.47 R 5% 1 W	MAIN	BASIC	R23	030105647811
RES.M.FILM FUSING	047 R 5% 1 W	MAIN	BASIC	R647	030105647811
RES.M.O.FILM	1 K 5% 3 W	MAIN	BASIC	R614	030218610211
RES.M.O.FILM	1.5 R 5% 1/2 W	MAIN	BASIC	R624	030056415421
RES.M.O.FILM	10 K 5% 2 W	MAIN	BASIC	R604	030208610311
RES.M.O.FILM	12 K 5% 1 W	MAIN	BASIC	R25	030108712311
RES.M.O.FILM	220 R 5% 1/2 W	MAIN	BASIC	R627	
RES.M.O.FILM	3.3 R 5% 1 W	MAIN	BASIC	R645	030108633911
RES.M.O.FILM	47 K 5% 1 W	MAIN	BASIC	R24	030108647311
RES.M.O.FILM	470 R 5% 1/2 W	MAIN	BASIC	R625	030050647110
RES.M.O.FILM	470 R 5% 1/2 W	MAIN	BASIC	R626	030050647110
RES.M.O.FILM	5.6 R 10% 5 W	MAIN	BASIC	R607	032053656921
RES.M.O.FILM	68 K 5% 2 W	MAIN	BASIC	R2	030208668311
RES.M.O.FILM	68 K 5% 2 W	MAIN	BASIC	R3	030208668311
SWITCH, POWER	GDE SEALED S-40	MAIN	BASIC	SW1	081000000031
SWITCH, TACT	SKHHLN METAL CONTACT 6X6	MAIN	BASIC	SW301	081101114021
SWITCH, TACT	SKHHLN METAL CONTACT 6X6	MAIN	BASIC	SW302	081101114021
SWITCH, TACT	SKHHLN METAL CONTACT 6X6	MAIN	BASIC	SW303	081101114021
SWITCH, TACT	SKHHLN METAL CONTACT 6X6	MAIN	BASIC	SW304	081101114021
TRANSFORMER	HORIZONTAL DRIVE	MAIN	BASIC	TR602	602300033051
TRANSISTOR	2SC1573A	MAIN	BASIC	Q601	046000000051
TRANSISTOR	BC 547 B	MAIN	BASIC	Q101	046246022281
TRANSISTOR	BC 547 B	MAIN	BASIC	Q20	046246022281
TRANSISTOR	BC 547 B	MAIN	BASIC	Q304	046246022281
TRANSISTOR	BC 547 B	MAIN	BASIC	Q305	046246022281
TRANSISTOR	BC 547 B	MAIN	BASIC	Q306	046246022281
TRANSISTOR	BC 558	MAIN	BASIC	Q308	046926267271
TRANSISTOR	BUH 515 D 6A 1500 V	MAIN	BASIC	Q602	046932183031
TRANSISTOR	PH2369	MAIN	BASIC	Q301	046000022101
TRANSISTOR	STH3N90 150W (BUZ 77 B)	MAIN	BASIC	Q1	

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COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
TRIMPOT,CARBON	10 K 20% 0.5W VERT.	MAIN	BASIC	P101	611380011031
TRIMPOT,CARBON	10 K 20% 0.5W VERT.	MAIN	BASIC	P102	611380011031
TRIMPOT,CARBON	2 K 20% 0.5W VERT.	MAIN	BASIC	P1	611380012021
TRIMPOT,CARBON	5 K 20% 0.5W VERT.	MAIN	BASIC	P601	
TRIMPOT,CARBON	500 R 20% 0.5W VERT.	MAIN	BASIC	P602	611380015011
DIODE,ZENER	3.6 V	MAIN	BASIC	ZD301	
FILTER,CERAMIC	6.5 MHz SFE 6.5 MB	MAIN	D/K	FI105	049030000531
FILTER,CERAMIC	6.5 MHz TPS 6.5 MB	MAIN	D/K	FI103	037730007081
RES.CAR.FILM	270 R 5% 1/6W	MAIN	D/K	R192	030140627111
CAP.CERAMIC	100 PF 10% 50 V SL	MAIN	D/K	C193	040040041011
POWER CORD	AC CORD 2X500 UH	MAIN	EXPORT - B/G - D/K		002528554031
CAP.CERAMIC	10 NF +80-20% 50 VF	TELETEXT	F.TEXT	C502	040070041031
CAP.CERAMIC	22 NF +80-20% 50 VF	TELETEXT	F.TEXT	C524	040070042231
CAP.CERAMIC	22 PF 10% 50 V CH	TELETEXT	F.TEXT	C504	040042042201
CAP.CERAMIC	22 PF 10% 50 V CH	TELETEXT	F.TEXT	C505	040042042201
CAP.ELECT.	1 µF 20% 16 V	TELETEXT	F.TEXT	C500	042416161051
CAP.ELECT.	1 µF 20% 16 V	TELETEXT	F.TEXT	C503	042416161051
CAP.ELECT.	1 µF 20% 16 V	TELETEXT	F.TEXT	C525	042416161051
CAP.ELECT.	100 µF 20% 16 V	TELETEXT	F.TEXT	C523	042140161071
CAP.ELECT.	4.7 µF 20% 16 V	TELETEXT	F.TEXT	C501	042446164751
CAP.M.POLYESTER	0.1 µF 10% 50 V	TELETEXT	F.TEXT	C506	621004001041
CAP.M.POLYESTER	0.1 µF 10% 50 V	TELETEXT	F.TEXT	C507	621004001041
CONNECTOR B. TO BOARD	12 P FEMALE	TELETEXT	F.TEXT	CN500	075101260001
CRYSTAL	13.875MHz	TELETEXT	F.TEXT	EM500	049030000161
CRYSTAL	9.8304MHz	TELETEXT	F.TEXT	EM502	049030000451
DIODE	1N4148	TELETEXT	F.TEXT	D500	048210411001
IC	PCF84C81 / CTV974	TELETEXT	F.TEXT	IC501	045000000071
RES.CAR.FILM	1 K 5% 1/6 W	TELETEXT	F.TEXT	R501	030140612221
RES.CAR.FILM	10 K 5% 1/6 W	TELETEXT	F.TEXT	R518	030140613311
RES.CAR.FILM	100 R 5% 1/6 W	TELETEXT	F.TEXT	R502	030140611101
RES.CAR.FILM	100 R 5% 1/6 W	TELETEXT	F.TEXT	R503	030140611101
RES.CAR.FILM	100 R 5% 1/6 W	TELETEXT	F.TEXT	R515	030140611101
RES.CAR.FILM	100 R 5% 1/6 W	TELETEXT	F.TEXT	R516	030140611101
RES.CAR.FILM	3.9 K 5% 1/6 W	TELETEXT	F.TEXT	R500	030140632211
RES.CAR.FILMNON FLAMMABLE	10 R 5% 1/6 W	TELETEXT	F.TEXT	R504	030140610011
RES.CAR.FILMNON FLAMMABLE	10 R 5% 1/6 W	TELETEXT	F.TEXT	R508	030140610011
RES.CAR.FILMNON FLAMMABLE	10 R 5% 1/6 W	TELETEXT	F.TEXT	R509	030140610011
IC	STV5346A/H	TELETEXT	F.TEXT/EAST	IC500	045101072241
IC	STV5346A/T	TELETEXT	F.TEXT/WEST	IC500	045101072251
IC	ST24C02B1	TELETEXT	F.TEXT\LIST	IC502	045101072261
RES.CAR.FILM	100 R 5% 1/6 W	TELETEXT	F.TEXT\LIST	R505	030140611101
RES.CAR.FILM	100 R 5% 1/6 W	TELETEXT	F.TEXT\LIST	R506	030140611101
RES.CAR.FILMNON FLAMMABLE	10 R 5% 1/6 W	TELETEXT	F.TEXT\LIST	R507	030140610011
REMOTE CONTROL		R/C	FULL TXT		631020001091
CAP.CERAMIC	1 NF +80-20% 50 VF	G.STEREO	G.STEREO	C917	040070041021
CAP.CERAMIC	10 NF +80-20% 50 VF	G.STEREO	G.STEREO	C910	040070021021
CAP.CERAMIC	10 NF +80-20% 50 VF	G.STEREO	G.STEREO	C911	040070041031
CAP.CERAMIC	10 NF +80-20% 50 VF	G.STEREO	G.STEREO	C915	040070041031
CAP.CERAMIC	100 NF +80-20% 25 VF	G.STEREO	G.STEREO	C902	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	G.STEREO	G.STEREO	C903	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	G.STEREO	G.STEREO	C909	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	G.STEREO	G.STEREO	C916	040070021031
CAP.CERAMIC	22 NF +80-20% 50 VF	G.STEREO	G.STEREO	C900	040070042231
CAP.CERAMIC	22 NF +80-20% 50 VF	G.STEREO	G.STEREO	C901	040070042231
CAP.CERAMIC	47 PF 10% 50 V CH	G.STEREO	G.STEREO	C906	040040047101

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PUSH THROUGH CHASSIS PART LIST

COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
CAP.ELECT.	1 µF 20% 16 V	G.STEREO	G.STEREO	C920	042416161051
CAP.ELECT.	1 µF 20% 16 V	G.STEREO	G.STEREO	C921	042416161051
CAP.ELECT.	1 µF 20% 16 V	G.STEREO	G.STEREO	C922	042416161051
CAP.ELECT.	1 µF 20% 16 V	G.STEREO	G.STEREO	C923	042416161051
CAP.ELECT.	1 µF 20% 16 V	G.STEREO	G.STEREO	C924	042416161051
CAP.ELECT.	1 µF 20% 16 V	G.STEREO	G.STEREO	C925	042416161051
CAP.ELECT.	10 µF 20% 16 V	G.STEREO	G.STEREO	C904	042446161061
CAP.ELECT.	10 µF 20% 16 V	G.STEREO	G.STEREO	C914	042446161061
CAP.ELECT.	220 µF 20% 16 V	G.STEREO	G.STEREO	C919	042417162271
CAP.ELECT.	47 µF 20% 16 V	G.STEREO	G.STEREO	C908	042447164761
CAP.M.POLYESTER	0.22 µF 10% 50 V	G.STEREO	G.STEREO	C912	621004002241
CAP.M.POLYESTER	0.22 µF 10% 50 V	G.STEREO	G.STEREO	C913	621004002241
CAP.STYROFLEX	3.6 NF 2% 50 VF	G.STEREO	G.STEREO	C910	619202003611
COIL, AX.FIXED	2.5 UH J	G.STEREO	G.STEREO	L901	608180000111
COIL, AX.FIXED	8.2 UH J	G.STEREO	G.STEREO	L900	608080000191
COIL,TOKO	7M 5.7 MHz IFT	G.STEREO	G.STEREO	T900	608280001611
CRYSTAL	10.00 MHz	G.STEREO	G.STEREO	EM900	049030000151
FILTER,CERAMIC	5.74 MHz SFT 5.74MA	G.STEREO	G.STEREO	FI902	037730008231
IC	TBA 120U	G.STEREO	G.STEREO	IC900	045100080301
IC	TDA9840	G.STEREO	G.STEREO	IC901	045000000751
RES.CAR.FILM	1 K 5% 1/6 W	G.STEREO	G.STEREO	R900	030140610211
RES.CAR.FILM	100 R 5% 1/6 W	G.STEREO	G.STEREO	R903	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	G.STEREO	G.STEREO	R904	030140610101
RES.CAR.FILM	27 K 5% 1/6 W	G.STEREO	G.STEREO	R905	030140627311
RES.CAR.FILM	4.7 K 5% 1/6 W	G.STEREO	G.STEREO	R901	030140647211
RES.CAR.FILM	8.2 K 5% 1/6 W	G.STEREO	G.STEREO	R902	030140682211
RES.CAR.FILMNON FLAMMABLE	1 R 5% 1/6 W	G.STEREO	G.STEREO	R915	030140610901
TRIMPOT,CARBON	10 K 20% 0.5W VERT.	G.STEREO	G.STEREO	P900	611380011031
CAP.CERAMIC	220 PF 10% 50 V SL	MAIN	G.STEREO	C101	040040042211
FILTER,CERAMIC	5.5 MHz SFT 5.5 MA	MAIN	G.STEREO	FI104	037730008221
CAP.CERAMIC	10 NF +80-20% 25 V	MAIN	MONO	C404	
CAP.CERAMIC	47 NF +80-20% 50 V	MAIN	MONO	C405	
CAP.ELECT.	1 µF 20% 16 V	MAIN	MONO	C403	042416161051
CAP.ELECT.	1 µF 20% 25 V	MAIN	MONO	C103	042416251071
CAP.ELECT.	470 µF 20% 25 V	MAIN	MONO	C402	042449254771
CAP.POLYESTER	0.0022 µF 10% 50 V	MAIN	MONO	C101	
DIODE	1N4148	MAIN	MONO	D406	048210411001
IC	CTV322S V2.0, PCA84C641	MAIN	MONO	IC301	045101070231
IC	TDA7056A	MAIN	MONO	IC401	045000000971
RES.CAR.FILM	1 R 5% 1/6 W	MAIN	MONO	R406	
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	MONO	R111	030140610211
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	MONO	R309	030140610211
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	MONO	R401	030140610211
RES.CAR.FILM	22 K 5% 1/6 W	MAIN	MONO	R109	030140622311
RES.CAR.FILM	270 K 5% 1/6 W	MAIN	MONO	R405	
RES.CAR.FILM	47 K 5% 1/6 W	MAIN	MONO	R151	030140647311
RES.CAR.FILM	68 K 5% 1/6 W	MAIN	MONO	R150	030140668311
RES.M.O.FILM	4.7 R 5% 3 W	MAIN	MONO	R403	
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	MONO SCART	R670	030140610211
RES.CAR.FILM	1.8 K 5% 1/6 W	MAIN	MONO SCART	R667	030140618201
RES.CAR.FILM	2.2 K 5% 1/6 W	MAIN	MONO SCART	R669	030140622221
RES.CAR.FILM	220 R 5% 1/6 W	MAIN	MONO SCART	R668	030140622101
RES.CAR.FILM	390 K 5% 1/6 W	MAIN	MONO SCART	R672	030140639411
RES.CAR.FILM	680 K 5% 1/6 W	MAIN	MONO SCART	R671	030140668411
TRANSISTOR	BC 547 B	MAIN	MONO SCART	Q653	046246022281

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PUSH THROUGH CHASSIS PART LIST

COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
TRANSISTOR	BC 547 B	MAIN	MONO SCART	Q654	046246022281
FILTER,CERAMIC	5.5 MHz SFE 5.5 MB	MAIN	MONO-B/G-D/K-L/L'	FI104	037730008211
CAP.CERAMIC	33 PF 10% 50 V CH	MAIN	MONO/G.STEREO	C191	040040043301
CAP.CERAMIC	47 PF 10% 50 V CH	MAIN	MONO/G.STEREO	C106	040040044701
CAP.M.P.O.	220 NF 10% 50 V CH	MAIN	MONO/G.STEREO	C139	621004002241
COIL, AX.FIXED	8.2 UH J	MAIN	MONO/G.STEREO	L103	608080000191
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	MONO/G.STEREO	R106	030140610101
IC	TDA8362	MAIN	MULTI SYS.(PAL/SEC)	IC101	045000000711
CAP.POLYESTER	0.0047 µF 10% 63 V	MAIN	NICAM	C101	618024074701
CAP.CERAMIC	1 NF +80-20% 50 VF	NICAM	NICAM	C8**	040070041021
CAP.CERAMIC	10 NF +80-20% 50 VF	NICAM	NICAM	C8**	040070041031
CAP.CERAMIC	10 PF 5% 50 V CH	NICAM	NICAM	C8**	040032041001
CAP.CERAMIC	100 NF +80-20% 25 VF	NICAM	NICAM	C8**	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	NICAM	NICAM	C8**	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	NICAM	NICAM	C8**	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	NICAM	NICAM	C8**	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	NICAM	NICAM	C8**	040070021031
CAP.CERAMIC	100 NF +80-20% 25VF	NICAM	NICAM	C8**	040070021031
CAP.CERAMIC	100 NF +80-20% 25 VF	NICAM	NICAM	C8**	040070021031
CAP.CERAMIC	100 PF 10% 50 V SL	NICAM	NICAM	C8**	040040041011
CAP.CERAMIC	100 PF 10% 50 V SL	NICAM	NICAM	C8**	040040041011
CAP.CERAMIC	15 PF 5% 50 V CH	NICAM	NICAM	C8**	040032041501
CAP.CERAMIC	220 PF 10% 50 V SL	NICAM	NICAM	C8**	040040042211
CAP.CERAMIC	27 PF 10% 50 V CH	NICAM	NICAM	C8**	040040042701
CAP.CERAMIC	390 PF 10% 50 V SL	NICAM	NICAM	C8**	040030043921
CAP.ELECT.	0.22 µF 20% 16 V	NICAM	NICAM	C8**	042100161071
CAP.ELECT.	1 µF 20% 50 V	NICAM	NICAM	C8**	042416501051
CAP.ELECT.	10 µF 20% 16 V	NICAM	NICAM	C8**	042446161061
CAP.ELECT.	10 µF 20% 16 V	NICAM	NICAM	C8**	042446161061
CAP.ELECT.	10 µF 20% 16 V	NICAM	NICAM	C8**	042446161061
CAP.ELECT.	10 µF 20% 16 V	NICAM	NICAM	C8**	042446161061
CAP.ELECT.	10 µF 20% 16 V	NICAM	NICAM	C8**	042446161061
CAP.ELECT.	100 µF 20% 16 V	NICAM	NICAM	C8**	042140161071
CAP.ELECT.	2.2 µF 20% 25 V	NICAM	NICAM	C8**	042412252011
CAP.ELECT.	22 µF 20% 50 V	NICAM	NICAM	C8**	042416502261
CAP.ELECT.	4.7 µF 20% 16 V	NICAM	NICAM	C8**	042446164751
CAP.ELECT.	47 µF 20% 16 V	NICAM	NICAM	C8**	042447164761
CAP.ELECT.	47 µF 20% 16 V	NICAM	NICAM	C8**	042447164761
CAP.ELECT.	47 µF 20% 16 V	NICAM	NICAM	C8**	042447164761
CAP.ELECT.	47 µF 20% 16 V	NICAM	NICAM	C8**	042447164761
CAP.ELECT.	47 µF 20% 16 V	NICAM	NICAM	C8**	042447164761
CAP.ELECT.	47 µF 20% 16 V	NICAM	NICAM	C8**	042447164761
CAP.M.POLYESTER	0.330 µF 5% 63 V	NICAM	NICAM	C8**	620004183341
CAP.M.POLYESTER	0.470 µF 10% 63 V	NICAM	NICAM	C8**	619005164741
CAP.POLYESTER	0.047 µF 10% 50 V	NICAM	NICAM	C8**	621004104731
COIL,AXIAL FIXED	6.8 UH J	NICAM	NICAM	L800	608080100161
CRYSTAL+A790	8.192 MHz	NICAM	NICAM	EM800	049030100081
DIODE	1N4148	NICAM	NICAM	D801	048210111001
DIODE	BB405	NICAM	NICAM	D802	048000100191
IC	SAA7283 ZP	NICAM	NICAM	IC800	045000100841
IC	TDA3845	NICAM	NICAM	IC801	045000100991
RES.CAR.FILM	1 K 5% 1/6 W	NICAM	NICAM	R8**	030140110211
RES.CAR.FILM	1 M 5% 1/6 W	NICAM	NICAM	R8**	030140110501
RES.CAR.FILM	1.8 K 5% 1/6 W	NICAM	NICAM	R8**	030140118201
RES.CAR.FILM	10 K 5% 1/6 W	NICAM	NICAM	R8**	030140110311

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COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
RES.CAR.FILM	100 R 5% 1/6 W	NICAM	NICAM	R8**	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	NICAM	NICAM	R8**	030140610101
RES.CAR.FILM	150 R 5% 1/6 W	NICAM	NICAM	R8**	030140615111
RES.CAR.FILM	22 K 5% 1/6 W	NICAM	NICAM	R8**	030140622311
RES.CAR.FILM	33 K 5% 1/6 W	NICAM	NICAM	R8**	030140633301
RES.CAR.FILM	680 K 5% 1/6 W	NICAM	NICAM	R8**	030140668411
RES.CAR.FILMNON FLAMMABLE	1 R 5% 1/4 W	NICAM	NICAM	R8**	030020610921
RES.CAR.FILMNON FLAMMABLE	1 R 5% 1/4 W	NICAM	NICAM	R8**	030020610921
RES.CAR.FILMNON FLAMMABLE	10 R 5% 1/4 W	NICAM	NICAM	R8**	030020610041
RES.CAR.FILMNON FLAMMABLE	22 R 5% 1/4 W	NICAM	NICAM	R8**	030020622021
COIL,TOKO	INTC. (T-SW-2099)	NICAM	NICAM	T800	608280001881
FILTER,SAW	OFWJ9250M	NICAM	NICAM	FI800	037730007811
CAP.POLYESTER	0.022 µF 5% 50 V	NICAM	NICAM	C8**	618013002231
FILTER,CERAMIC	6 MHz SFE 6 MB	MAIN	PALI	FI104	037720007831
FILTER,CERAMIC	6 MHz TPS 6 MB	MAIN	PALI	FI102	037720007821
FILTER,SAW	OFWJ1952M	MAIN	PALI	FI101	037790007871
POWER CORD	LTBS 0.75 SQM 3M W PLUG	MAIN	PALI	P603	002528503011
CAP.ELECT.	100 µF 20% 16 V	MAIN	S.TEXT	C657	042140161071
REMOTE CONTROL		R/C	S/FTEXT		
CAP.CERAMIC	4700 PF 10% 50 VB	MAIN	SCART	C653	040040044721
CAP.CERAMIC	4700 PF 10% 50 VB	MAIN	SCART	C654	040040044721
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	SCART	C112	620013081041
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	SCART	C114	620013081041
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	SCART	C115	620013081041
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	SCART	C116	620013081041
CAP.M.POLYESTER	0.22 µF 10% 50 V	MAIN	SCART	C655	621004002241
COIL, AX.FIXED	1 UH J	MAIN	SCART	L653	608980000111
COIL, AX.FIXED	8.2 UH J	MAIN	SCART	L652	608080000191
JUMPER		MAIN	SCART	R660	
JUMPER		MAIN	SCART	R661	
JUMPER		MAIN	SCART	R664	
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	SCART	R659	030140610211
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	SCART	R663	030140610411
RES.CAR.FILM	12 K 5% 1/6 W	MAIN	SCART	R662	030140612311
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	SCART	R348	030140647211
RES.CAR.FILM	5.6 K 5% 1/6 W	MAIN	SCART	R665	030140656211
RES.CAR.FILM	5.6 K 5% 1/6 W	MAIN	SCART	R666	030140656211
RES.CAR.FILM	75 R 5% 1/6 W	MAIN	SCART	R110	030140675011
RES.CAR.FILM	75 R 5% 1/6 W	MAIN	SCART	R655	030140675011
RES.CAR.FILM	75 R 5% 1/6 W	MAIN	SCART	R656	030140675011
RES.CAR.FILM	75 R 5% 1/6 W	MAIN	SCART	R657	030140675011
RES.CAR.FILM	75 R 5% 1/6 W	MAIN	SCART	R658	030140675011
TRANSISTOR	BC 547 B	MAIN	SCART	Q103	046246022281
TRANSISTOR	BC 547 B	MAIN	SCART	Q652	046246022281
RES.CAR.FILM	5.6 K 5% 1/6 W	MAIN	SCART	R675	030140656211
CAP.CERAMIC	330 PF 10% 25 V	MAIN	SCART - STEREO	C651	040040043331
CAP.CERAMIC	330 PF 10% 25 V	MAIN	SCART - STEREO	C652	040040043331
COIL, AX.FIXED	8.2 UH J	MAIN	SCART - STEREO	L651	608080000191
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	SCART - STEREO	R673	030140647211
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	SECAM	C252	040070021031
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	SECAM	C253	620013081041
CAP.M.POLYESTER	0.22 µF 10% 63 V	MAIN	SECAM	C254	620004072241
IC	TDA 8395	MAIN	SECAM	IC251	045000000731
RES.CAR.FILMNON FLAMMABLE	2.2 R 5% 1/6 W	MAIN	SECAM	R251	030140622911
CAP.CERAMIC	10 NF +80-20% 50 VF	MAIN	SECAML	C263	040070041031

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COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
CAP.ELECT.	100 µF 20% 16 V	MAIN	SECAML	C262	042140161071
CAP.ELECT.	4.7 µF 20% 16 V	MAIN	SECAML	C258	042446164751
CAP.ELECT.	4.7 µF 20% 16 V	MAIN	SECAML	C259	042446164751
CAP.M.POLYESTER	0.22 µF 10% 63 V	MAIN	SECAML	C260	620004072241
CAP.M.POLYESTER	0.22 µF 10% 63 V	MAIN	SECAML	C261	620004072241
CAP.M.POLYESTER	0.22 µF 10% 63 V	MAIN	SECAML	C264	620004072241
CAP.M.POLYESTER	0.22 µF 10% 63 V	MAIN	SECAML	C265	620004072241
CAP.M.POLYESTER	0.22 µF 10% 63 V	MAIN	SECAML	C266	620004072241
DIODE	1N4148	MAIN	SECAML	D259	048210411001
DIODE	1N4148	MAIN	SECAML	D260	048210411001
DIODE	BAT85	MAIN	SECAML	D257	048210200001
DIODE	BAT85	MAIN	SECAML	D258	048210200001
FILTER,SAW	L9453M	MAIN	SECAML	FI251	037730007851
IC	TDA9830	MAIN	SECAML	IC252	045000000861
RES.CAR.FILM	1.8 K 5% 1/6 W	MAIN	SECAML	R253	030140618201
RES.CAR.FILM	1.8 K 5% 1/6 W	MAIN	SECAML	R259	030140618201
RES.CAR.FILM	10 K 5% 1/6 W	MAIN	SECAML	R255	030140610311
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	SECAML	R262	030140610411
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	SECAML	R264	030140610411
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	SECAML	R265	030140610411
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	SECAML	R266	030140610411
RES.CAR.FILM	22 K 5% 1/6 W	MAIN	SECAML	R257	030140622311
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	SECAML	R254	030140647211
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	SECAML	R256	030140647211
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	SECAML	R258	030140647211
RES.CAR.FILM	47 K 5% 1/6 W	MAIN	SECAML	R263	030140647311
RES.CAR.FILM	5.6 K 5% 1/6 W	MAIN	SECAML	R261	030140656211
RES.CAR.FILM	6.8 K 5% 1/6 W	MAIN	SECAML	R260	030140668201
TRANSISTOR	BC 547 B	MAIN	SECAML	Q271	046240222281
TRANSISTOR	BC 547 B	MAIN	SECAML	Q272	046240222281
TRANSISTOR	BC 547 B	MAIN	SECAML	Q273	046240222281
TRANSISTOR	BC 547 B	MAIN	SECAML	Q274	046240222281
CAP.ELECT.	10 µF 20% 16 V	MAIN	SECAML	C280	042441161061
CAP.M.POLYESTER	0.1 µF 10% 50 V	MAIN	SECAML	C255	621004001041
DIODE	1N4148	MAIN	SECAML	D251	048214411001
DIODE	1N4148	MAIN	SECAML	D252	048214411001
DIODE	1N4148	MAIN	SECAML	D253	048214411001
DIODE	1N4148	MAIN	SECAML	D318	048214411001
DIODE	1N4148	MAIN	SECAML	D350	048214411001
DIODE	1N4148	MAIN	SECAML	D351	048214411001
DIODE	BAT85	MAIN	SECAML	D255	048212000001
DIODE	BB809	MAIN	SECAML	D254	048321007011
FILTER,SAW	K3953	MAIN	SECAML	FI101	037730007801
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	SECAML	R288	030146102211
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	SECAML	R274	030146104411
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	SECAML	R290	030146104411
RES.CAR.FILM	15 K 5% 1/6 W	MAIN	SECAML	R291	030146155311
RES.CAR.FILM	180 K 5% 1/6 W	MAIN	SECAML	R275	030146184211
RES.CAR.FILM	2.2 K 5% 1/6 W	MAIN	SECAML	R280	030146222221
RES.CAR.FILM	2.7 K 5% 1/6 W	MAIN	SECAML	R287	030146227211
RES.CAR.FILM	22 K 5% 1/6 W	MAIN	SECAML	R133	030146223311
RES.CAR.FILM	22 K 5% 1/6 W	MAIN	SECAML	R281	030146223311
RES.CAR.FILM	22 K 5% 1/6 W	MAIN	SECAML	R285	030146223311
RES.CAR.FILM	39 K 5% 1/6 W	MAIN	SECAML	R282	030146339301
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	SECAML	R283	030146447211

REV.004

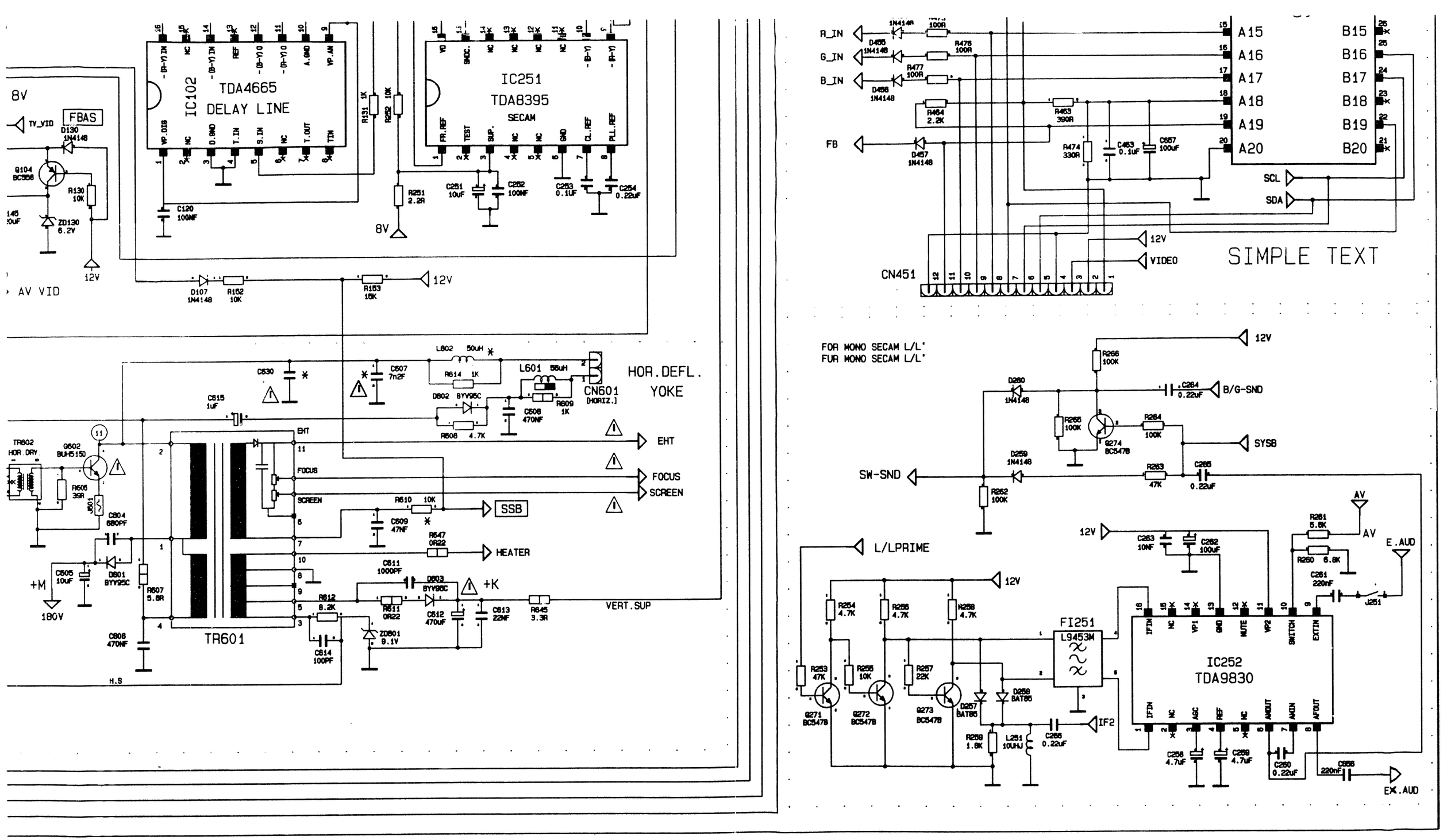
PUSH THROUGH CHASSIS PART LIST

COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
RES.CAR.FILM	47 K 5% 1/6 W	MAIN	SECAML	R284	030140647311
RES.CAR.FILM	47 K 5% 1/6 W	MAIN	SECAML	R286	030140647311
RES.CAR.FILM	47 K 5% 1/6 W	MAIN	SECAML	R289	030140647311
RES.CAR.FILM	47 R 5% 1/6 W	MAIN	SECAML	R277	030140647011
RES.CAR.FILM	6.8 K 5% 1/6 W	MAIN	SECAML	R134	030140668201
RES.CAR.FILM	6.8 K 5% 1/6 W	MAIN	SECAML	R289	030140668201
RES.CAR.FILM	6.8 K 5% 1/6 W	MAIN	SECAML	R117	030140668201
RES.CAR.FILM	68 K 5% 1/6 W	MAIN	SECAML	R276	030140668311
RES.CAR.FILM	7.5 K 5% 1/6 W	MAIN	SECAML	R135	030140675201
RES.CAR.FILM	820 R 5% 1/6 W	MAIN	SECAML	R278	030140682121
TRANSISTOR	BC 547 B	MAIN	SECAML	Q106	046246022281
TRANSISTOR	BC 547 B	MAIN	SECAML	Q275	046246022281
TRANSISTOR	BC 547 B	MAIN	SECAML	Q276	046246022281
TRANSISTOR	BC 547 B	MAIN	SECAML	Q277	046246022281
TRANSISTOR	BC 547 B	MAIN	SECAML	Q278	046246022281
TRANSISTOR	BC 547 B	MAIN	SECAML	Q279	046246022281
TRIMPOT,CARBON	47 K 20% 0.5W VERT.	MAIN	SECAML	P251	611380011031
CAP.CERAMIC	1 NF +80-20% 50 VF	MAIN	SIMPLE TEXT	C458	040070041021
CAP.CERAMIC	15 PF 5% 50 V CH	MAIN	SIMPLE TEXT	C456	040032041501
CAP.CERAMIC	8.2 PF 5% 50 V	MAIN	SIMPLE TEXT	C457	040032048301
CAP.ELECT.	100 µF 20% 16 V	MAIN	SIMPLE TEXT	C464	042140161071
CAP.ELECT.	100 µF 20% 16 V	MAIN	SIMPLE TEXT	C465	042140161071
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	SIMPLE TEXT	C459	620013081041
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	SIMPLE TEXT	C460	620013081041
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	SIMPLE TEXT	C462	620013081041
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	SIMPLE TEXT	C463	620013081041
COIL, AX.FIXED	3.3 UH J	MAIN	SIMPLE TEXT	L452	608000000071
CRYSTAL	27 MHz	MAIN	SIMPLE TEXT	EM451	049030000341
RES.CAR.FILM	2.2 K 5% 1/6 W	MAIN	SIMPLE TEXT	R464	030140622221
RES.CAR.FILM	22 K 5% 1/6 W	MAIN	SIMPLE TEXT	R467	030140622311
RES.CAR.FILM	27 K 5% 1/6 W	MAIN	SIMPLE TEXT	R462	030140627311
RES.CAR.FILM	3.3 K 5% 1/6 W	MAIN	SIMPLE TEXT	R461	030140633201
RES.CAR.FILM	330 R 5% 1/6 W	MAIN	SIMPLE TEXT	R474	
RES.CAR.FILM	390 R 5% 1/6 W	MAIN	SIMPLE TEXT	R463	030020639131
RES.CAR.FILM	8.2 K 5% 1/6 W	MAIN	SIMPLE TEXT	R468	030140682211
TRANSISTOR	BC 547 B	MAIN	SIMPLE TEXT	Q454	046246022281
IC	SAA5254P/H	MAIN	SIMPLE TEXT - EAST.E	IC451	045190113501
IC	SAA5254P/T	MAIN	SIMPLE TEXT - WEST	IC451	045190113491
REMOTE CONTROL		R/C	SIMPLETXT		
IC	TDA8361	MAIN	SINGLE SYS.(PAL)	IC101	045190083671
RES.CAR.FILM	1 K 5% 1/6 W	MAIN	SINGLESCART	R652	030140610211
RES.CAR.FILM	220 R 5% 1/6 W	MAIN	SINGLESCART	R651	030140622101
RES.CAR.FILM	33 R 5% 1/6 W	MAIN	SINGLESCART	R653	030140633011
TRANSISTOR	BC 547 B	MAIN	SINGLESCART	Q651	046246022281
CAP.CERAMIC	100 NF +80-20% 25 VF	G.STEREO/NICAM	STEREO	C934	040070021031
CAP.ELECT.	100 µF 20% 16 V	G.STEREO/NICAM	STEREO	C933	042140161071
CAP.ELECT.	100 µF 20% 16 V	G.STEREO/NICAM	STEREO	C935	042140161071
CAP.M.POLYESTER	0.22 µF 10% 50 V	G.STEREO/NICAM	STEREO	C930	621004002241
CAP.M.POLYESTER	0.22 µF 10% 50 V	G.STEREO/NICAM	STEREO	C938	621004002241
CAP.POLYESTER	0.0068 µF 10% 50 V	G.STEREO/NICAM	STEREO	C929	618014006821
CAP.POLYESTER	0.0068 µF 10% 50 V	G.STEREO/NICAM	STEREO	C937	618014006821
CAP.POLYESTER	15 NF 10% 50 V	G.STEREO/NICAM	STEREO	C926	621004001531
CAP.POLYESTER	15 NF 10% 50 V	G.STEREO/NICAM	STEREO	C927	621004001531
CAP.POLYESTER	33 NF 5 % 50 V	G.STEREO/NICAM	STEREO	C928	621003003331
CAP.POLYESTER	33 NF 5 % 50 V	G.STEREO/NICAM	STEREO	C936	621003003331

REV.004

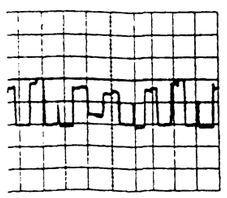
PUSH THROUGH CHASSIS PART LIST

COMPONENT	DESCRIPTION	BOARD	FUNCTION	POS	TELRA-NO
CONNECTOR B. TO BOARD	9 P FEMALE	G.STEREO/NICAM	STEREO	CN901	075030910871
CONNECTOR B. TO BOARD	9 P FEMALE	G.STEREO/NICAM	STEREO	CN902	075030910871
IC	TDA8425	G.STEREO/NICAM	STEREO	IC902	045000000701
RES.CAR.FILM	1.2 K 5% 1/6 W	G.STEREO/NICAM	STEREO	R909	
RES.CAR.FILM	1.2 K 5% 1/6 W	G.STEREO/NICAM	STEREO	R913	
RES.CAR.FILM	100 R 5% 1/6 W	G.STEREO/NICAM	STEREO	R911	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	G.STEREO/NICAM	STEREO	R912	030140610101
RES.CAR.FILM	2.2 K 5% 1/6 W	G.STEREO/NICAM	STEREO	R914	030140622221
RES.CAR.FILM	4.7 K 5% 1/6 W	G.STEREO/NICAM	STEREO	R910	030140647211
RES.CAR.FILMNON FLAMMABLE	1 R 5% 1/6 W	G.STEREO/NICAM	STEREO	R908	030140610901
CAP.ELECT.	1000 µF 20% 25 V	MAIN	STEREO	C402	042440251081
CONNECTOR 3P	3P	MAIN	STEREO	CN303	
IC	CTV352S V1.4, PCA84C841	MAIN	STEREO	IC301	045101070211
IC	TDA7057AQ	MAIN	STEREO	IC402	045000000981
RES.CAR.FILM	100 K 5% 1/6 W	MAIN	STEREO	R151	030140610411
RES.CAR.FILM	120 K 5% 1/6 W	MAIN	STEREO	R150	
RES.M.O.FILM	0.47 R 10% 2 W	MAIN	STEREO	R403	
WIRE CONNECTOR	3P (25cm)	MAIN	STEREO	WC903	
CONNECTOR 3P	3P	STEREO	STEREO	CN903	
TUNER	SAMSUNG TUNER	MAIN	TEK BAND	EM101	616800020071
CAP.CERAMIC	180 PF 5% 50 V CH	MAIN	TELETEXT	C455	040037041811
CAP.ELECT.	47 µF 20% 16 V	MAIN	TELETEXT	C451	042447154761
CAP.ELECT.	47 µF 20% 16 V	MAIN	TELETEXT	C452	042447154761
CAP.M.POLYESTER	0.1 µF 5% 63 V	MAIN	TELETEXT	C461	620013081041
COIL, AX.FIXED	10 UH J	MAIN	TELETEXT	L451	608000000021
DIODE	1N4148	MAIN	TELETEXT	D451	048210411001
DIODE	1N4148	MAIN	TELETEXT	D452	048210411001
DIODE	1N4148	MAIN	TELETEXT	D454	048210411001
DIODE	1N4148	MAIN	TELETEXT	D455	048210411001
DIODE	1N4148	MAIN	TELETEXT	D456	048210411001
DIODE	1N4148	MAIN	TELETEXT	D457	048210411001
RES.CAR.FILM	1.8 K 5% 1/6 W	MAIN	TELETEXT	R494	030140618201
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	TELETEXT	R457	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	TELETEXT	R475	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	TELETEXT	R476	030140610101
RES.CAR.FILM	100 R 5% 1/6 W	MAIN	TELETEXT	R477	030140610101
RES.CAR.FILM	2.2 K 5% 1/6 W	MAIN	TELETEXT	R456	030140622221
RES.CAR.FILM	220 R 5% 1/6 W	MAIN	TELETEXT	R460	030140622101
RES.CAR.FILM	33 K 5% 1/6 W	MAIN	TELETEXT	R452	030140633301
RES.CAR.FILM	33 K 5% 1/6 W	MAIN	TELETEXT	R454	030140633301
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	TELETEXT	R453	030140647211
RES.CAR.FILM	4.7 K 5% 1/6 W	MAIN	TELETEXT	R458	030140647211
RES.CAR.FILM	470 R 5% 1/6 W	MAIN	TELETEXT	R492	030140647111
RES.CAR.FILM	75 R 5% 1/6 W	MAIN	TELETEXT	R491	030140675011
RES.CAR.FILM	8.2 K 5% 1/6 W	MAIN	TELETEXT	R455	030140628211
TRANSISTOR	BC 547 B	MAIN	TELETEXT	Q451	046246022281
TRANSISTOR	BC 547 B	MAIN	TELETEXT	Q452	046246022281
TRANSISTOR	BC 547 B	MAIN	TELETEXT	Q453	046246022281
COIL, AX.FIXED	10 UH J	MAIN	UC BAND	L305	608000000021
CAP.CERAMIC	100 NF +80-20% 25 VF	MAIN	UC BAND	C323	040070041031
CAP.ELECT.	10 µF 20% 16 V	MAIN	UC BAND	C151	042446161061
CAP.ELECT.	10 µF 20% 16 V	MAIN	UC BAND	C152	042446161061
IC	LA7910	MAIN	UC BAND	IC303	045300000081
TUNER	SAMSUNG TUNER	MAIN	UC BAND	EM101	616800000081
REMOTE CONTROL		R/C	W/OTEXT		



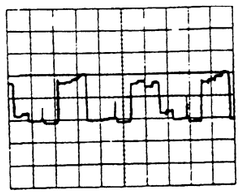
APES / OSZILLOGRAMME

) 20 usn/div 2 volt/div



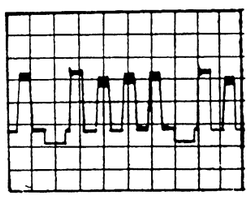
C 101 pin 20

9) 20 usn/div 2 volt/div



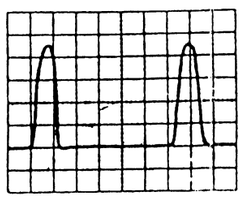
IC 101 pin 19

10) 10 usn/div 2 volt/div



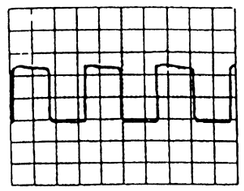
IC 101 pin 18

11) 10 usn/div 250 volt/div



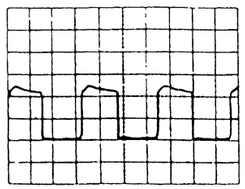
Collector of Q602

12) 20 usn/div 0.2 volt/div



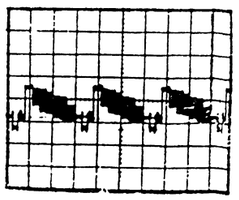
IC 101 pin 37

13) 20 usn/div 50 volt/div



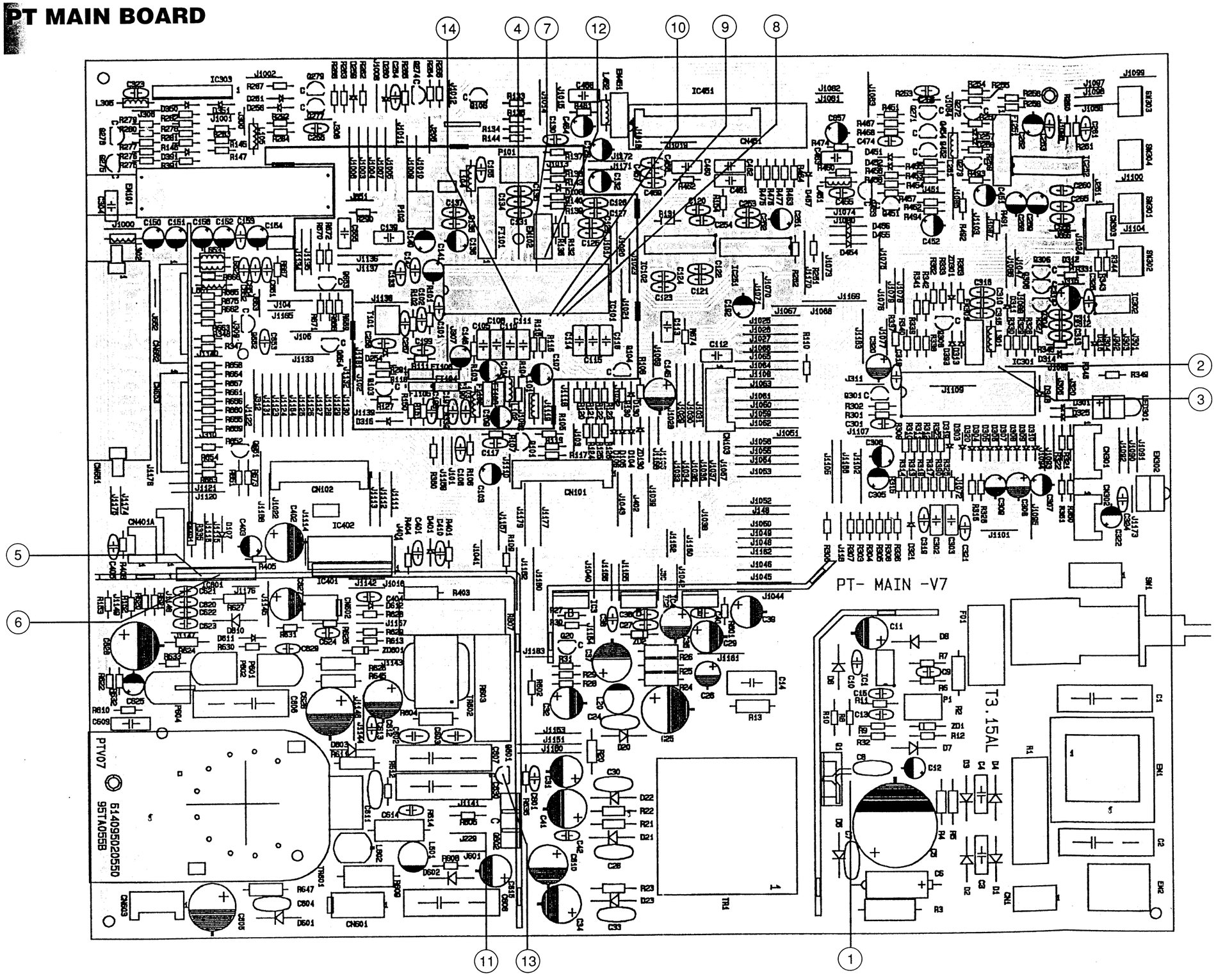
Collector of Q601

14) 20 usn/div 1 volt/div



IC 101 pin 13

PT MAIN BOARD



FOR SECAM L/L'
FUR SECAM L/L'

VHF-I
VTUNE
L/LPRIME
SYSB
SYS
AGC
SDA
SCL
STDBY
FBAS
EX.AUD
AV
R_INPUT
B/G-SND
MDSTR
AFC
P.UP
P.DWN
V.UP
V.DWN

EN101
SAMSUNG-TUNER
GND UHF VHFIII VHFI TUN AGC IF IF +12V

IC303
LA7910
GND 12V 33V BAND1 BAND0

IC302
PCF8582
SDA SCL PTC VDD VSS A2 A1 A0

IC301
CTV322S (MONO)
CTV352S (STEREO)
VTUNE VOL BRIG SAT CONT HUE BND0 BND1 AFC ST.AV FE EXT1 KEY0 KEY1 KEY2 KEY3 KEY4 KEY5 KEY6 MDSTR GND
VDD STDBY SDA SCL SYS-1 SYS-2 EXT2 RMOT IDENT REST XTAL2 XTAL1 TEST D.OSC1 D.OSC2 V.SYN H.SYN FB B G R

IC402
TDA7057AQ (STEREO)
V.CN1 N.C. VIN1 VSUP VIN2 SGND V.CN2 OUT2+ PGND2 OUT2- OUT1- PGND1

IC101
TDA8362 (PAL/SECAM)
TDA8361 (PAL)
A.DEMP REF.C REF.C. IDEN S.IFIN EX.A.IN VOUT DEC. GND1 SUP. GND2 DEC INCVBSIN L.PEAK EXCVBSIN CHRIN/SS BRG B.OUT G.OUT R.OUT INB R.IN G.IN B.IN CONT. SAT.
B.DEC S.DEC S.OUT TUN.T-O AGC TUN.AGC IF.IN. IF.IN AFCOUT VER.DRV VER.R.6 VER.FB O1CON. O2CON. FLYIN/S H.DRV S.SUP. XTAL4.43 XTAL3.58 B.PH.DET SUBOUT S B-YOUT R-YOUT B-YIN R-YIN H/S.CHR

CN303
CN301

Q275 BC547B
Q276 BC547B
Q277 BC547B
Q279 BC547B
Q301 PH2369
Q303 BC558
Q304 BC547B
Q305 BC547B
Q306 BC547B
Q103 BC547B
Q101 BC547B

D250 1N4148
D251 1N4148
D255 1N4148
D254 1N4148
D301 3V6
D303 1N4148
D304 1N4148
D305 1N4148
D306 1N4148
D307 1N4148
D308 1N4148
D309 1N4148
D310 1N4148
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D312 1N4148
D313 1N4148
D316 1N4148
D318 1N4148
D319 1N4148
D320 1N4148
D321 1N4148
D325 1N4148
D350 1N4148
D351 1N4148
D391 1N4148
D401 1N4148

R278 820R
R279 XXXK
R280 2.2K
R281 22K
R282 30K
R263 4K7
R264 47K
R275 180K
R276 68K
R277 47R
R290 1K
R292 6K8
R287 2.7K
R288 47K
R147 10K
R145 22K
R391 12K
R307 12K
R308 2.2M
R303 100R
R304 5.6K
R305 15K
R306 15K
R350
R351
R335 1.6K
R301 10K
R309 1K
R310 10K
R311 15K
R312 1K
R321 10K
R322 10K
R323 1K
R390 12K
R326 100K
R325 220K
R344 100R
R343 100R
R109 22K
R111 1K
R151 47K
R291 15K
R404
R405 220K
R340 100R
R339
R336 100R
R337 2.2K
R341 3.3K
R342 3.3K
R302 3.3K
R318 100K
R316 100K
R317 27K
R315 100K
R314
R313
R330 JUMPER
R329 JUMPER
R328 JUMPER
R327 JUMPER
R336 1K
R352 390R
R333 1K
R363 4K7
R360 100K
R127 100K
R117 12K
R118 47K
R119 1K
R331
R673 4.7K
R674 75R
R124 100R
R125 100R
R126 100R
R104 100R
R103 120R
R105 180R
R106 100R
R107 180R
R115 6.2K
R116 4.7K
R108 2.2K
R110 75R
R120 1K
R121 100R
R122 100R
R123 100R
R101 270R
R102 5.6K
R150 68K
R332 10K
R109 22K

C250 0.1uF
C251 0.1uF
C252 1nF
C253 130NF
C254 10uF
C255 33uF
C256 1nF
C257 47pF
C150 10uF
C151 10uF
C152 10uF
C155 10PF
C156 33uF
C301 22NF
C302 0.33uF
C303 0.1uF
C304 0.33uF
C306 2.2uF
C307 10uF
C308 10uF
C305 1uF
C309 1uF
C310 22PF
C311 22PF
C312 22PF
C313 22PF
C314 100uF
C316 18PF
C317 18PF
C318 100NF
C319 220PF
C320 100uF
C321 100NF
C323 100NF
C325 100NF
C403 1uF
C101 2n2F
C102 22PF
C103 1uF
C104 10uF
C105 0.1uF
C106 47PF
C107 10uF
C108 0.1uF
C109 10uF
C110 0.1uF
C111 0.1uF
C112 0.1uF
C113 10NF
C114 0.1uF
C115 0.1uF
C116 0.1uF
C117 1nF
C146 4.7uF
C191 47pF
C193 100pF
C198 1nF
C199 1nF

L301 120UHJ
L302 1UHJ
L305 10UHJ
L101 10uH
L102 6.8UHJ
L103 6.8UHJ
L104 1UHJ
L105 10UHJ

T101 38.9MHZ
FI101 SFE5.5MB
FI102 TPS5.5MB
FI103 6.5MHz
FI104 SFE5.5MB
FI105 SFE5.5MB
FI106 SFE5.5MB
BK301 10.00MHz

J300 J301 J302 J303 J304 J305 J306 J307 J308 J309 J310 J311 J315 J320 J401
SW301 SKHHLNM.CONT.6X6
SW302 SKHHLNM.CONT.6X6
SW303 SKHHLNM.CONT.6X6
SW304 SKHHLNM.CONT.6X6

HA

SPEAKERS
CN401A
IC401
TDA7056A (MONO)
N.C. VSUP VIN SGND1 VCNT OUT+ SGND2 OUT- N.C.
R403 1R
12.5V
C401 100NF
C402 470uF
C404 10NF
C405 4n7F
R406 1R
CN401
OUT2- OUT1- PGND1 OUT1+
J402
C410
R401 1K
IC601
TDA3653
IN1 GND SW.IN GND OUT SUPP1 GUARD FLYB. SUPP2
VERT.SUP
(H.DRV)
C142 22NF
8V
R145 1K
R144 5.6K
C141 2.2uF
C140 10uF
C139 220NF
P102 10K
C137 22NF
C138 100NF
C136 2.2uF
B.DEC
S.DEC
S.OUT
TUN.T-O
AGC
TUN.AGC
IF.IN.
FI101
SAF38.9MS51P
R143 330K
C135 22NF
AFC
C520 1000PF
R520 3.9K
R521 10K
C521 4700PF
C522 4700PF
C523 1NF
C524 100NF
R525 220R
C527 100uF
D610 BYD33D
C528 470uF
R527 470R
R531 47K
CN602
[VERT.]
V.DEFL.YOKE
V. LINEARITY
VERT.
R451 JUMPER
VERT.PULSE
(TXT)
R632 12K
P604 1.8K
R522 56K
C525 2.2uF
C526 1000uF
R633 15K
P602 500R
V.AMP.
R524 1.5R
V.SHIFT
R626 470R
R628
P601 10K
R629 2.2K
D611
D612
R630 8K2
C529
5V
R139 12K
C133 4700PF
C131 4n7F
C132 1uF
P101 10K
H.SHIFT
R136 47K
C130 10NF
R138 470K
HOR.DRV
D108
R140 3.9M
33V
C134 0.1uF
R135 7.5K
Q105 BC547B
R134 6.8K
R133 22K
AV
R613 39K
V.SYNC
R G B SHIFT
EN102 4.433619MHz
C127 18PF
C128 10uF
C129 10NF
R137 4.7R
C125 4n7F
R132 100K
C126 100NF
B-Y OUT
R-Y OUT
R-Y IN
B-Y IN
B.PH.DET
SUBOUT S
B-YOUT
R-YOUT
R-YIN
B-YIN
H/S.CHR
INPUT
B-Y IN
Y IN
C124 100PF
R154
CN101
5V
12V
SYS
5V
5.5M/AV-SW
12V
EX.AUD
GND
GND
INTVID_L/LPRIME
J101
INT.VID
J102
L/LPRIME
J103
AV
CN102
TV-S/L
TV-S/R
AV-O/R
SYS
SW-SND
IF1
IF2
AV-I/R
GND
J105
J104
B/G-SND
SW-SND
IR. MODULE
LED301 RED
EM302 TFMS1360
GND IR VCC
R349 1K
C324 4700PF
C322 4.7uF
CN302
RMOT
5V
CN103
BLUE
GREEN
RED
GND
8V
CN603
180V
HEATER.
8V
R491 75R
AV.VID
R493
C451 47uF
R453 4.7K
R455 8.2K
D451 1N4148
C452 47uF
R454 33K
Q452 BC547B
D452 1N4148
R457 100R
R460 220R
Q453 BC547B
TV_VID
R492 470R
R494 1.8K
R452 33K
Q451 BC547B
R456 2.2K
L451 10UHJ
R458 4.7K
AV
J451
C455 180PF
VID-TXT
C461 0.1uF
5V
R461 3.3K
C458 1NF
C457 8.2PF
C455 15PF
C464 100uF
EM451 27MHZ
L452 3.3UHJ
C459 0.1uF
IC451
C460 0.1uF
VIDEO
R462 27K
C462 0.1uF
VERT.PULSE
R468 8.2K
C474 JUMPER
Q454 BC547B
R467 22K
5V
EVEN
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13
AA5254P

AFC
R328 100K
R325 220K
C309 1uF
5V
D319 1N4148
J310
J306
P.UP
SW301 SKHHLNM.CONT.6X6
P.DWN
SW302 SKHHLNM.CONT.6X6
SW303 SKHHLNM.CONT.6X6
V.UP
V.DWN
SW304 SKHHLNM.CONT.6X6
D303 1N4148
D304 1N4148
D305 1N4148
D306 1N4148
D307 1N4148
D308 1N4148
D309 1N4148
D310 1N4148
D301 1N4148
D325 1N4148
MDSTR
CN301
D320 1N4148
HA
AFC
ST.AV
FE
EXT1
KEY0
KEY1
KEY2
KEY3
KEY4
KEY5
KEY6
MDSTR
GND
CTV352S (STEREO)
CTV322
IDENT
REST
XTAL2
XTAL1
TEST
D.OSC1
D.OSC2
V.SYN
H.SYN
FB
B
G
R
EM301 10.00MHz
C316 18PF
C315 18PF
L301 12UHJ
C319 220PF
D313 1N4148
Q308 BC558
R352 390R
R333 1K
R353 4K7
ZD301 3V6
D303 1N4148
R360 100K
D316 1N4148
R127 100K
R117 12K
R116 47K
Q103 BC547B
J309
R348 4.7K
12V
AV
R119 1K
C113 10NF
R110 75R
C112 0.1uF
R120 1K
R121 100R
R122 100R
R123 100R
0.1uF
L.PEAK
EXCVBSIN
CHRIN/SS
BAS
B.OUT
G.OUT
R.OUT
INS.
R.IN
G.IN
B.IN
CONT.
SAT.
TDA8361 (PAL)
O2CON.
FLYIN/S
H.DRV
S.SUP.
XTAL4.43
XTAL3.58
B.PH.DET
SUBOUT S
B-YOUT
R-YOUT
R-YIN
B-YIN
H/S.CHR
EM102 4.43361MHz
HOR.DRV
B-Y
R-Y
VERT
R330 JUMPER
R329 JUMPER
R328 JUMPER
R327 JUMPER
C310 22PF
C311 22PF
C312 22PF
C313 22PF
Q304 BC547B
Q305 BC547B
Q306 BC547B
D312 1N4148
R331
J315
C314 100uF
D311 1N4148
FB
RED
GREEN
BLUE
R573 4.7K
J312
R124 100R
R125 100R
R126 100R
D104 1N4148
D105 1N4148
D106 1N4148
R874 75R
C192 4.7uF
R_INPUT
G_INPUT
B_INPUT
J1067
J666
AV-I/R
C654 4700PF
C653 4700PF
AV-O/L
AV-O/R
L651 8.2UHJ
L652 8.2UHJ
B/G-SND
8V
R671 680K
R669 2.2K
Q653 BC547B
Q654 BC547B
R668 220R
R667 1.8K
R672 390K
R670 1K
J651
SW-SND
C655 0.22uF
C651 330PF
C652 330PF
5V
D315 1N4148
D314 1N4148
R346 22K
R345 27K
B/G SOUND & MOD. POLARITY SWITCH FOR MONO SECAM L/L'
B/G SOUND UND MOD. POLARITAT SCHALTER FUR MONO SECAN L/L'
J653
E.AUD
R666 5.6K
R676 5.6K
R665 5.6K
R664 JUMPER
R663 100K
R662 12K
R661 JUMPER
R660 JUMPER
R659 1K
Q652 BC547B
CN651
S.SW
21PIN
R658 75R
R657 75R
R656 75R
R655
L653 1UHJ
CN652
CN653
Q651 BC547B
8V
TV_VID
FBAS
R651 220R
R652 1K
D130 1N4148
Q104 BC558
R130 10K
C145 220uF
ZD130 6.2V
5V
R654 75R
AV.VID
12V
AV VID
EM2 PTH451A
R1 5.6R
C3 2200PF
D2 1N4007
D3 1N4007
D1 1N4007
D4 1N4007
R2 68K
C4 2200PF
C5 100uF
CN1 DEGAUSS
C2 0.1uF
EM1 2m74MH
C1 0.1uF
F01 3.15A/250V
+B ADJ.
P1 2K
SW1 GDE.S-40
ZD1 6.2V
R12 5.6K
C10 0.22uF
C11 47uF
C12 1uF
IC1 TDA4605
GND PWD PCS REG.V PROUT SUP.V SS ZD
C15 270pF
R8 47R
R32 VAL
R9 47R
R10 5.1R4
R11 10K
D8 BYD33D
D6 BYD330
D7 BYD330
C13 3n3F
C14 2200PF
R13 8N2RCT
TR1
R3 68K
C6 33NF
D5 BYV95C
C7 1000PF
Q1 STH5N80.150W
C8 100PF
R6 220R
R4 330K
R5 220K
C9 6n8F
R7 3.3K
115V +B
R20 0.22R
D20 BYV95C
C24 470PF
C25 47uF
L20 150UHK
C26 22uF
C27 10NF
R25 12K
ZD2 ZTK33B
R24 47K
R21 0.22R
D21 BYV95C
C28 470PF
C30 1000PF
R22 0.22R
D22 BYV95C
R23 0.47R
D23 BYV95C
C33 1000PF
C34 1000uF
C31 220uF
IC2 L7805 7805
IC4 L7808 7808
IC3 LM317 LM317
R26 3R3
C29 220uF
C39 220uF
C40 100NF
C37 470uF
C38 100NF
R27 390R
R29 JUMPER
R28 3.3K
C32 1uF
C42 100NF
C41 470uF
Q20 BC547B
R30 10K
R31 4.7K
+D 33V
+C 8V
+A 12V
STDBY
+E 16V
+F 5V
C610 10uF
R603 2K
C603 2200PF
R635 1K
TR602 HOR.DRV.
Q602 BUH5150
R605 39R
Q601 2SC1573A
R604 10K
C601
C602 470PF
R601 4.7K
R602 82R
HOR.DRV
HOR.
C605 10uF
D60 BYV9
+M
180V
H.S

R139 12K
C133 4700PF
C131 4n7F
C132 1uF
8V
HOR.DRV
P101 10K
H.SHIFT
R136 47K
C130 10NF
R138 470K
EN102 4.433619MHz
C127 18PF
C128 10uF
C129 10NF
R137 4.7R
C125 4n7F
R132 100K
C126 100NF
C134 0.1uF
D108
8V
33V
R140 3.9R
C626 2.2uF
C625 1000uF
V.SHIFT
R628
R629 2.2K
R633 15K
P602 500R
V.AMP.
R624 1.5R
P601 10K
R135 7.5K
R134 5.6K
8V
Q105 BC547B
R133 22K
AV
R613 39K
V.SYNC
R G B SHIFT
B-Y OUT
R-Y OUT
R-Y IN
B-Y IN
5V
R154 2.2R
C121 1NF
C122 1NF
C123 100NF
C124 100NF
IC102
TDA4665
DELAY LINE
R131 1K
R252 10K
B-Y IN
R-Y IN
IC251
TDA8395
SECAM
C251 10uF
C252 100NF
C253 0.1UF
C254 0.22uF
R251 2.2R
8V
C120 100NF
FBAS
D130 1N4148
R130 10K
ZD130 6.2V
12V
VID
D107 1N4148
R152 10K
R153 15K
12V
L602 50uH
C630
C607 7n2F
R614 1K
L601 68uH
CN601 [HORIZ.]
HOR.DEFL. YOKE
C615 1uF
D602 BYV95C
R608 4.7K
C608 470NF
R609 1K
EHT
FOCUS
SCREEN
SSB
HEATER
+K
VERT.SUP
Q602 BUH515D
R605 39R
J601
C604 680PF
C605 10uF
D601 BYV95C
R607 5.6R
+M
180V
C606 470NF
TR601
R610 10K
C609 47NF
R647 0R22
C611 1000PF
D603 BYV95C
R611 0R22
C612 470uF
C613 22NF
R645 3.3R
R612 8.2K
ZD601 9.1V
AV
J451
D451 BC547B
R405 2.2K
R458 4.7K
10UHJ
C455 180PF
VID-TXT
C451 0.1uF
5V
C457 8.2PF
R461 3.3K
C456 1NF
C454 100uF
EM451 27MHZ
L452 3.3UHJ
C455 15PF
C459 0.1uF
C460 0.1uF
VIDEO
R462 27K
C462 0.1uF
IC451
SAA5254P
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20
VERT.PULSE
R488 8.2K
C474 JUMPER
5V
D454 BC547B
R467 22K
ODD/EVEN
R_IN
G_IN
B_IN
FB
D454 1N4148
D455 1N4148
D456 1N4148
D457 1N4148
R475 100R
R476 100R
R477 100R
R464 2.2K
R463 390R
R474 330R
C463 0.1uF
C657 100uF
SCL
SDA
12V
VIDEO
CN451
SIMPLE TEXT
FOR MONO SECAM L/L'
FUR MONO SECAM L/L'
12V
R266 100K
D260 1N4148
C264 0.22uF
B/G-SND
R265 100K
R264 100K
Q274 BC547B
SYSB
SW-SND
D259 1N4148
R263 47K
C265 0.22uF
R262 100K
AV
12V
C263 10NF
C262 100uF
R261 5.6K
R260 6.8K
E.AID
C261 220nF
J251
L/LPRIME
12V
R254 4.7K
R256 4.7K
R258 4.7K
FI251
L9453M
IFIN NC VP1 GND MUTE VP2 SWITCH EXTIN

B/G SOUND & MOD.
POLARITY SWITCH
FOR MONO SECAM L/L'

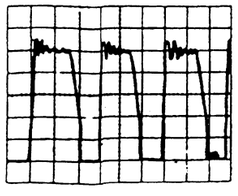
B/G SOUND UND MOD.
POLARITAT SCHALTER
FUR MONO SECAM L/L'

THE SERVICE INFORMATION FOR SAFETY
WHEN SERVICING THIS AREA. CONNECT
AN ISOLATING TRANSFORMER BETWEEN
TV RECEIVER AND AC LINE TO
ELIMINATE HAZARD OF ELECTRIC SHOCK.

AV-O/R
AV-O/L
AV-I/R
EX.AUD

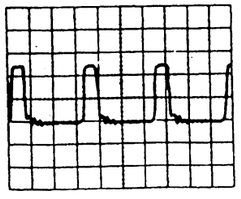
OSCILLOSCOPE SHAPES / OS

1) 5 usn/div 100 volt/div



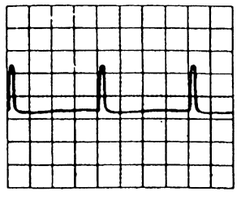
Drain of Q1

2) 20 usn/div 2volt/div



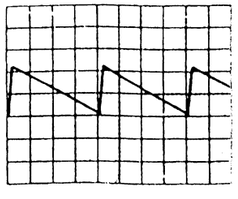
IC 301 pin 26

3) 5m sn/div 2volt/div



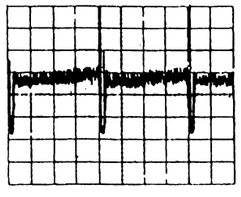
IC 301 pin 27

4) 5 msn/div 0,5 volt/div



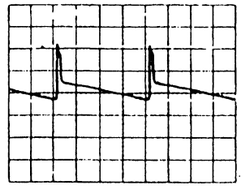
IC 101 pin 41

5) 5 msn/div 1 volt/div



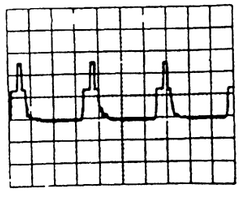
IC 601 pin 3

6) 5 msn/div 20 volt/div



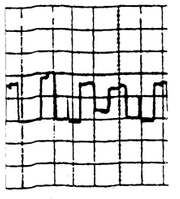
IC 601 pin 5

7) 20 usn/div 2 volt/div

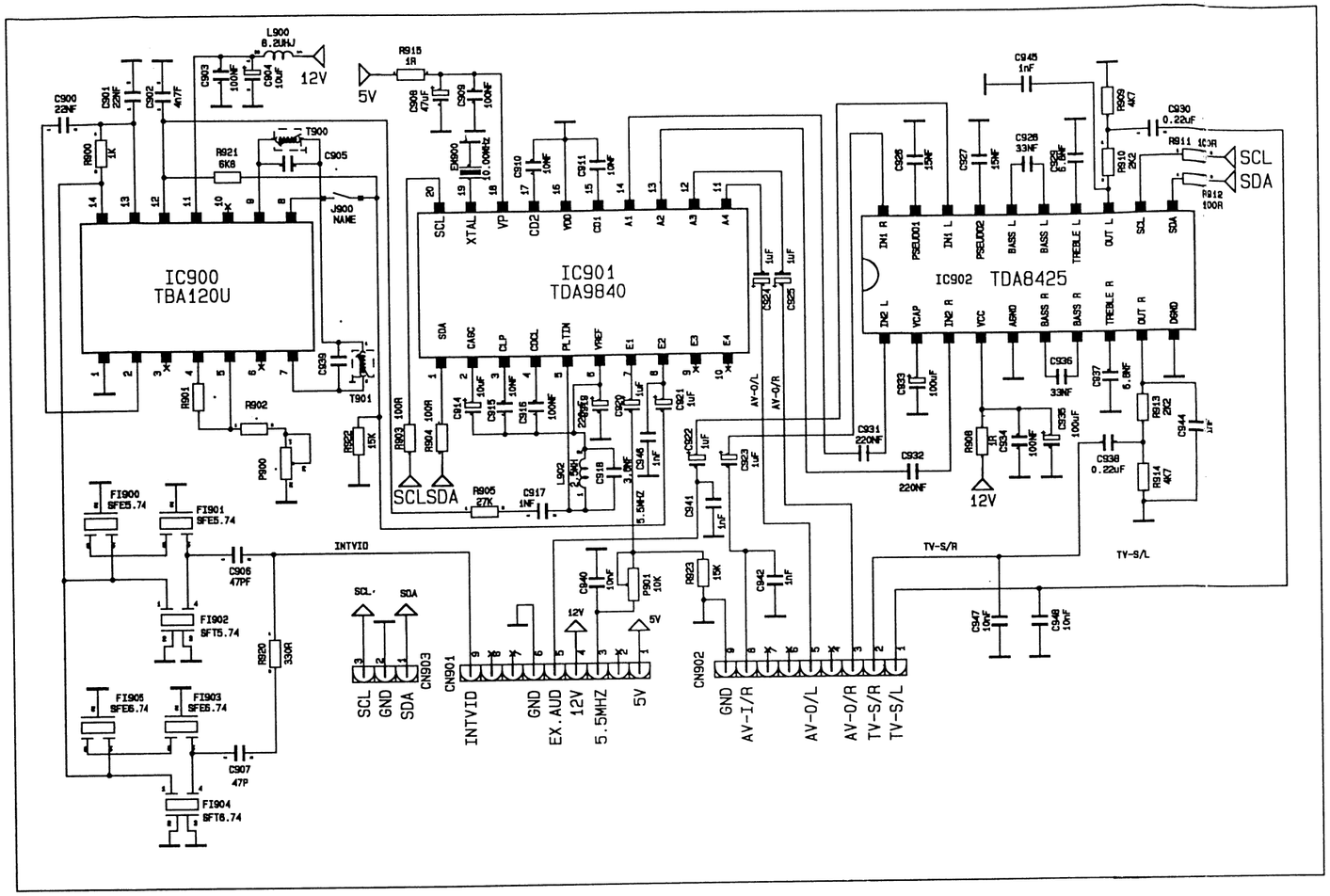


IC 101 pin 38

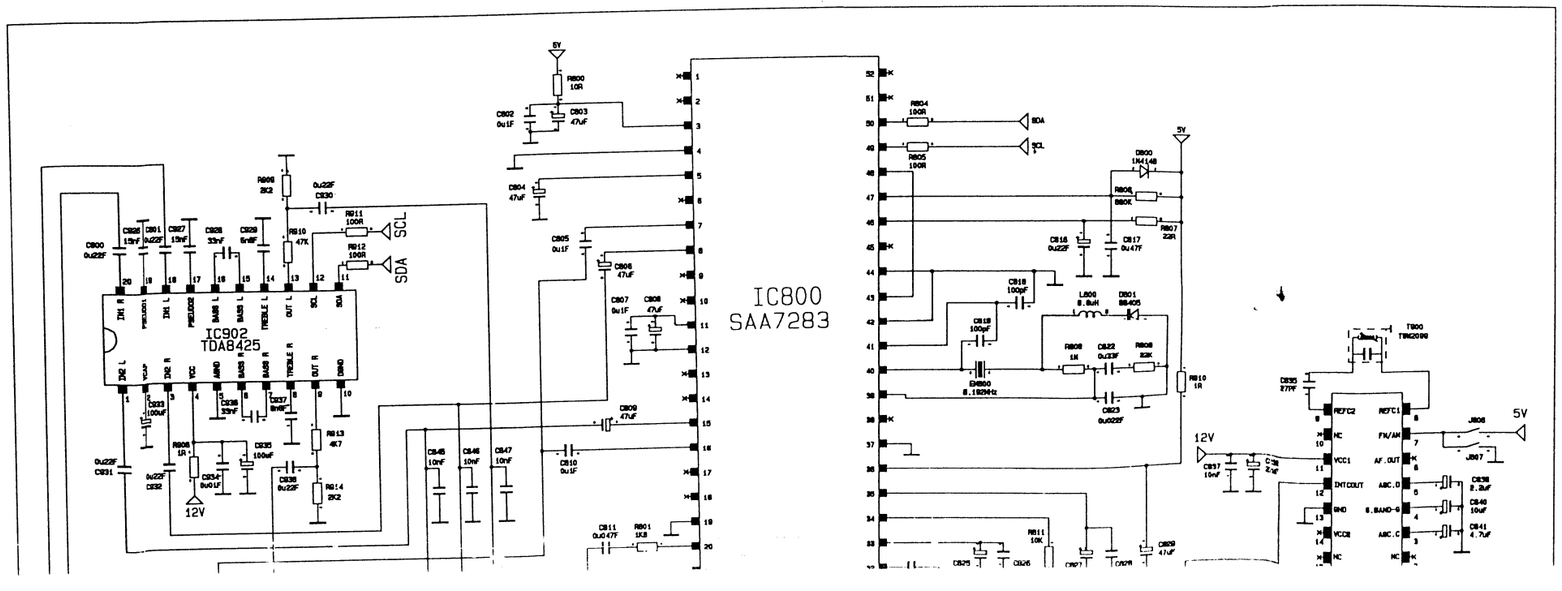
8) 20 usn/div 2

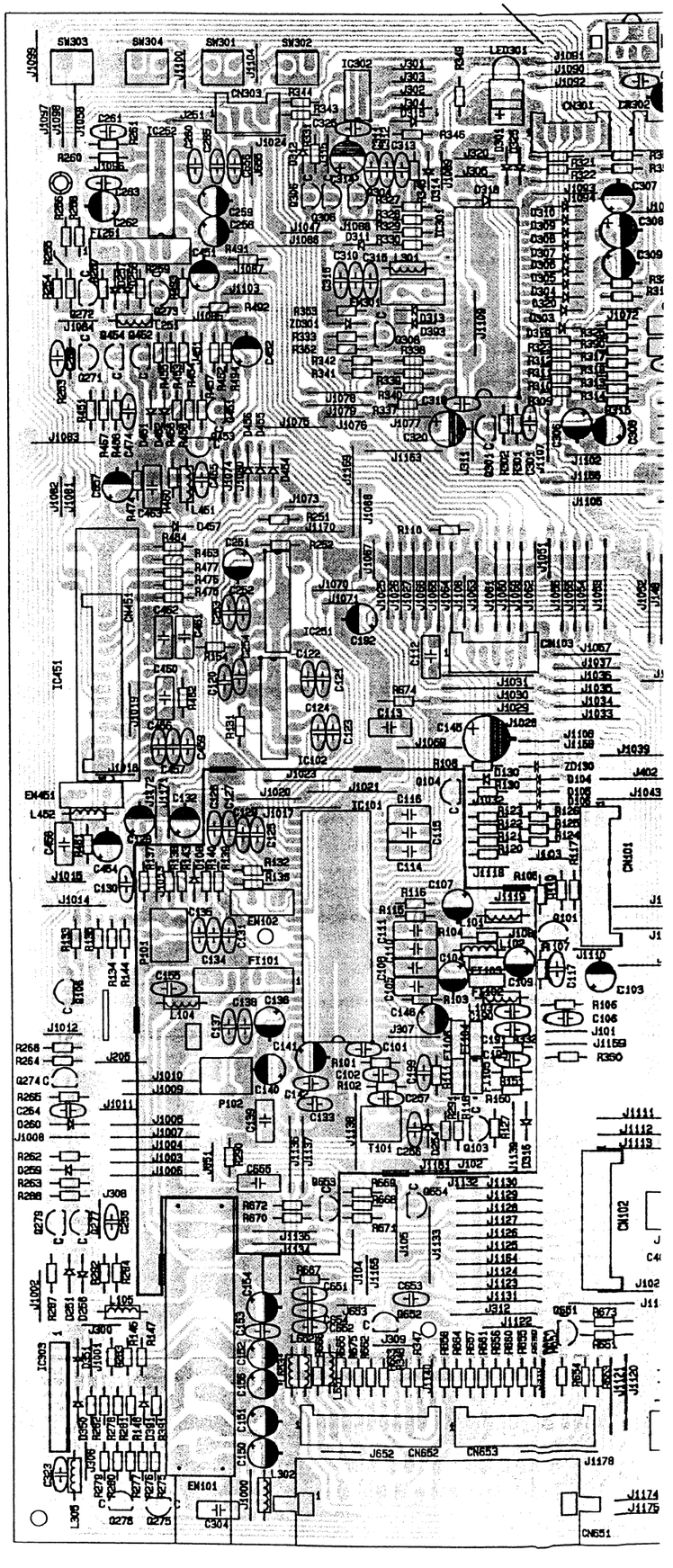


IC 101 pin 20

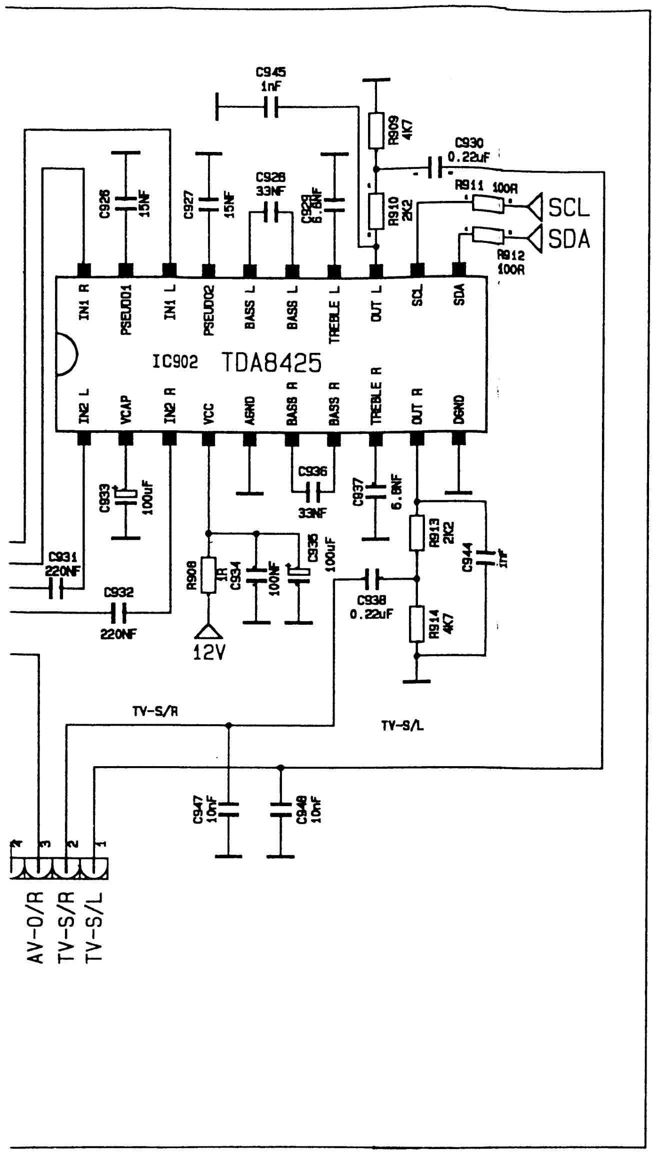


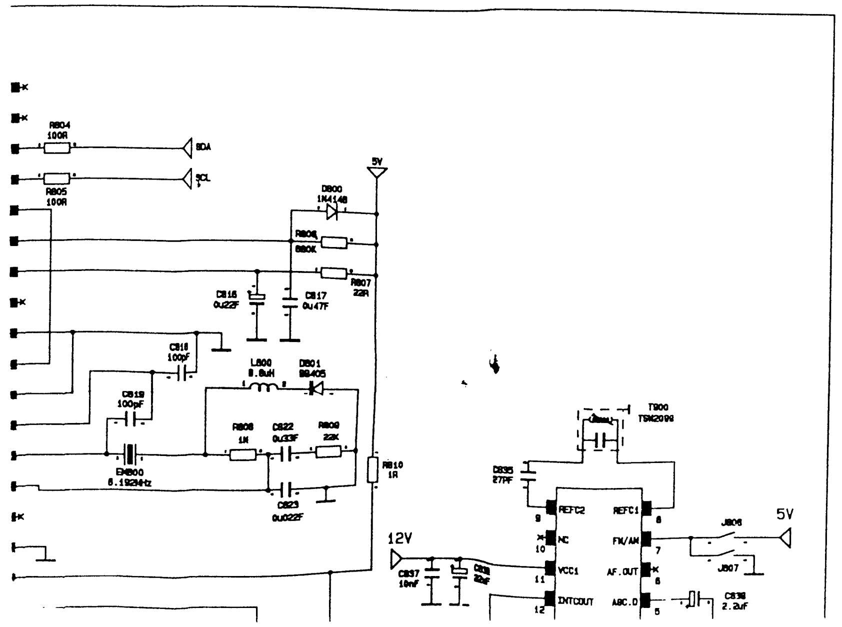
GERMAN STEREO BOARD CIRCUIT DIAGRAM / GERMAN STEREO BAUSTEIN SCHALTUNGSPLAN

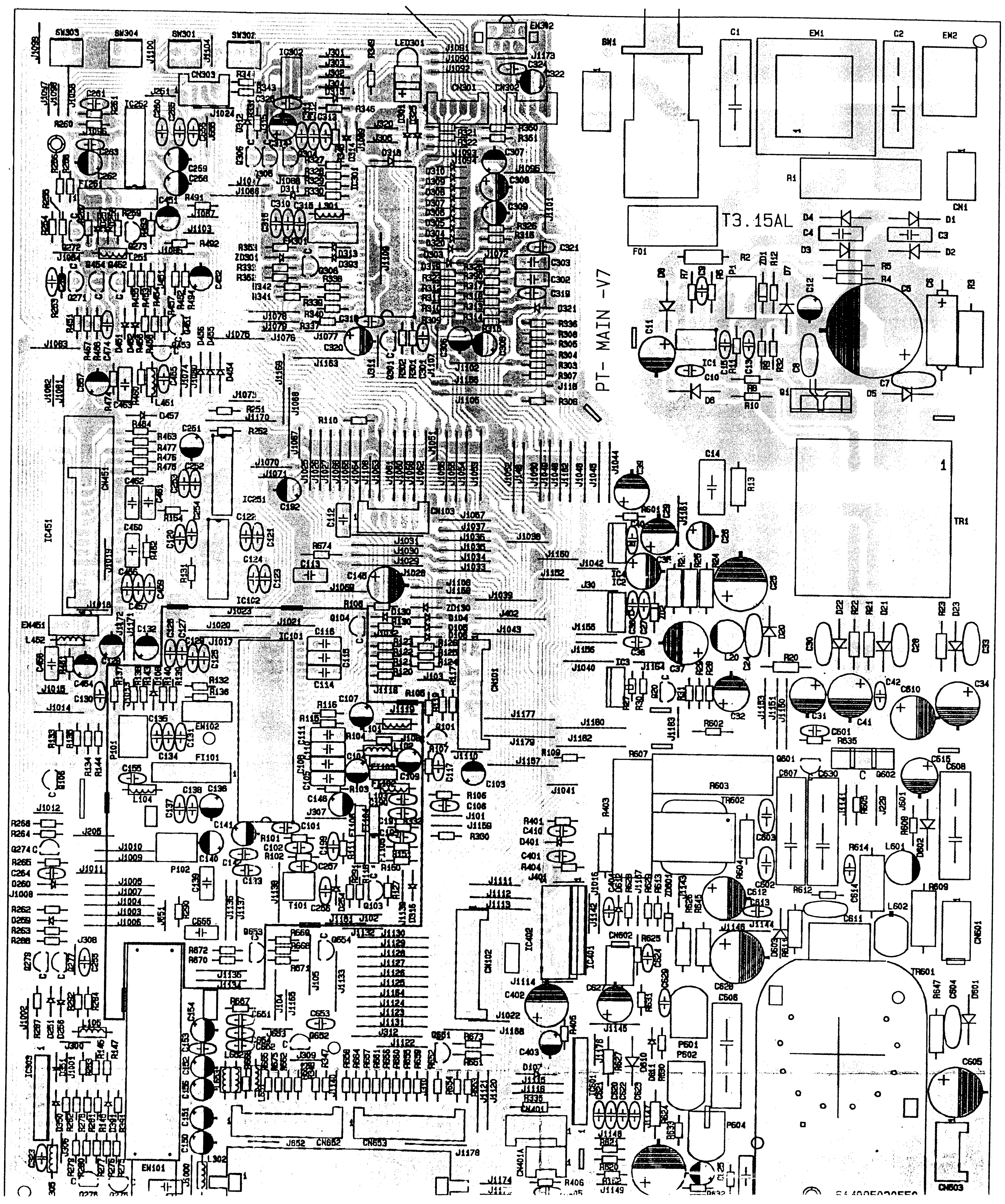


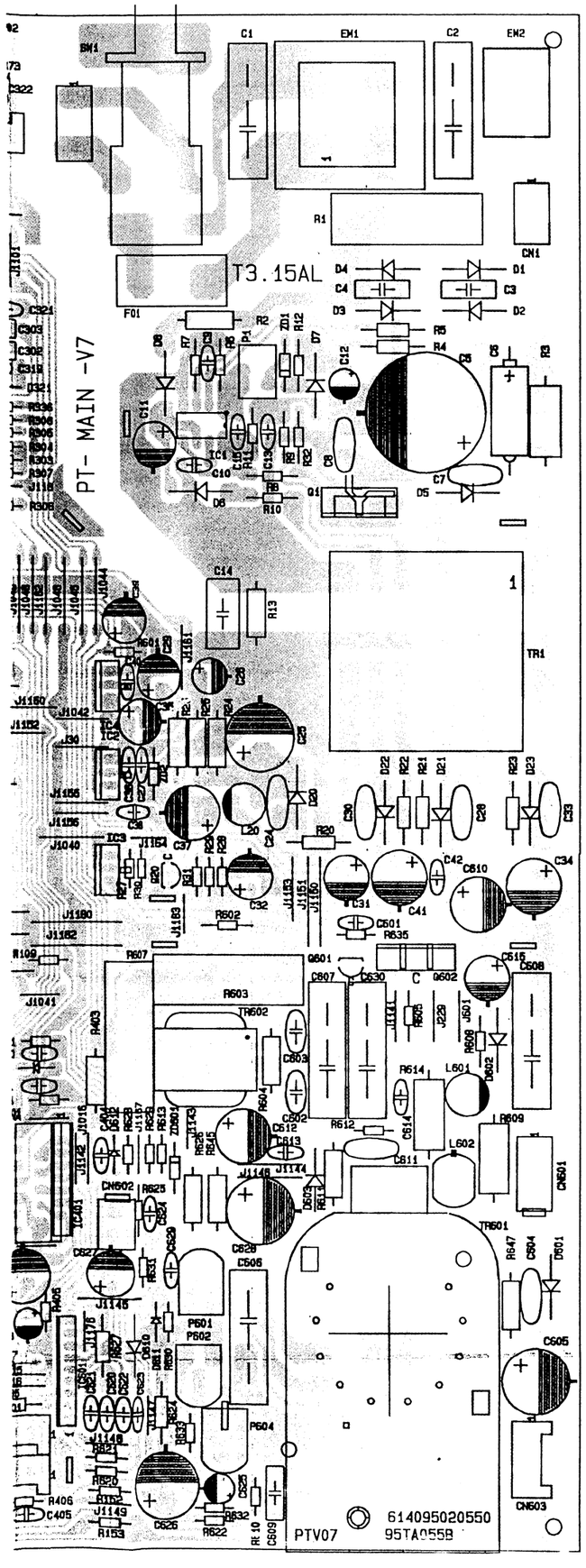


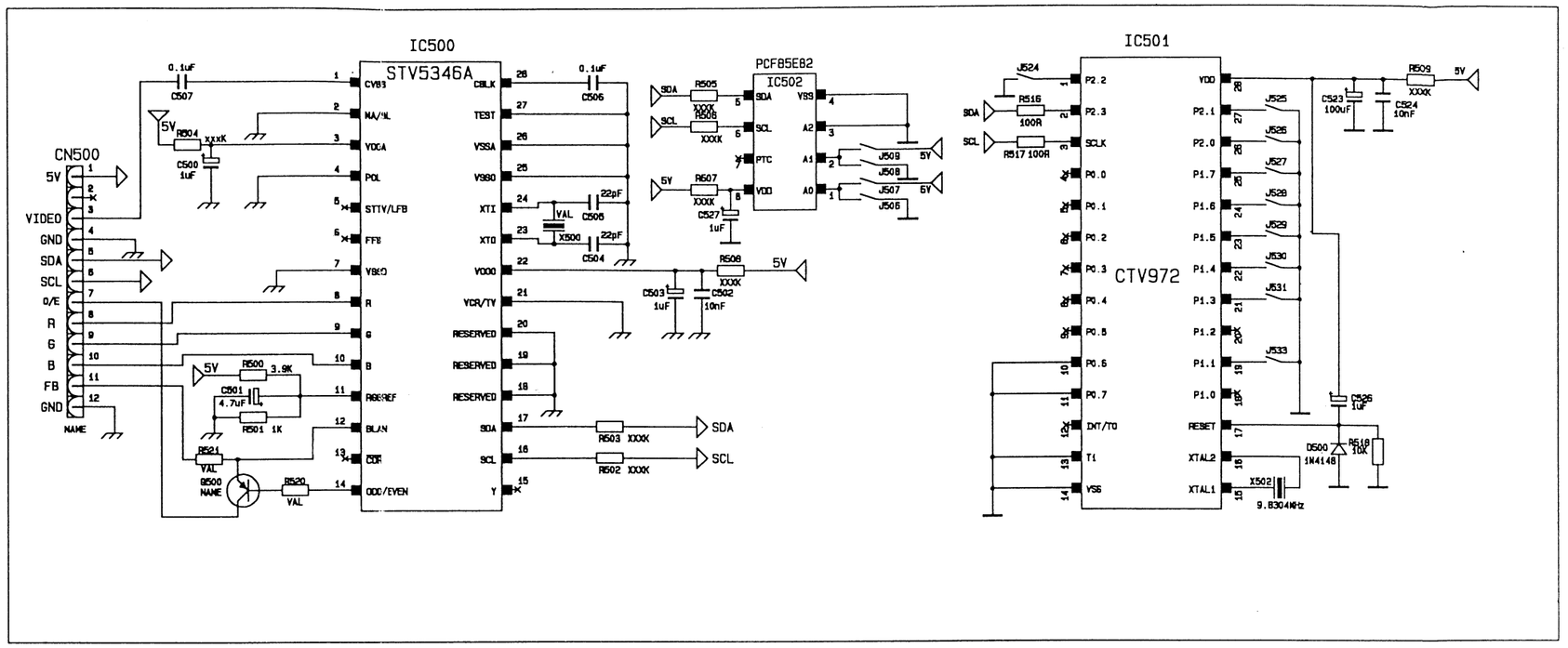
MAIN CHASSIS BOARD / CHASSISPLATE


IC902 TDA8425
IN1 R
PSEUDO1
IN1 L
PSEUDO2
BASS L
BASS L
TREBLE L
OUT L
SCL
SDA
IN2 L
VCAP
IN2 R
VCC
AGND
BASS R
BASS R
TREBLE R
OUT R
DGND
C945 1nF
R909 4K7
C930 0.22uF
R910 2K2
R911 100R
SCL
SDA
R912 100R
C926 15NF
C927 15NF
C928 33NF
C929 6.8NF
C933 100uF
C936 33NF
C937 6.8NF
R913 2K2
C944 1nF
C931 220NF
C932 220NF
R908 1R
C934 100NF
C935 100uF
C938 0.22uF
R914 4K7
12V
TV-S/R
TV-S/L
C947 10nF
C948 10nF
AV-O/R
TV-S/R
TV-S/L

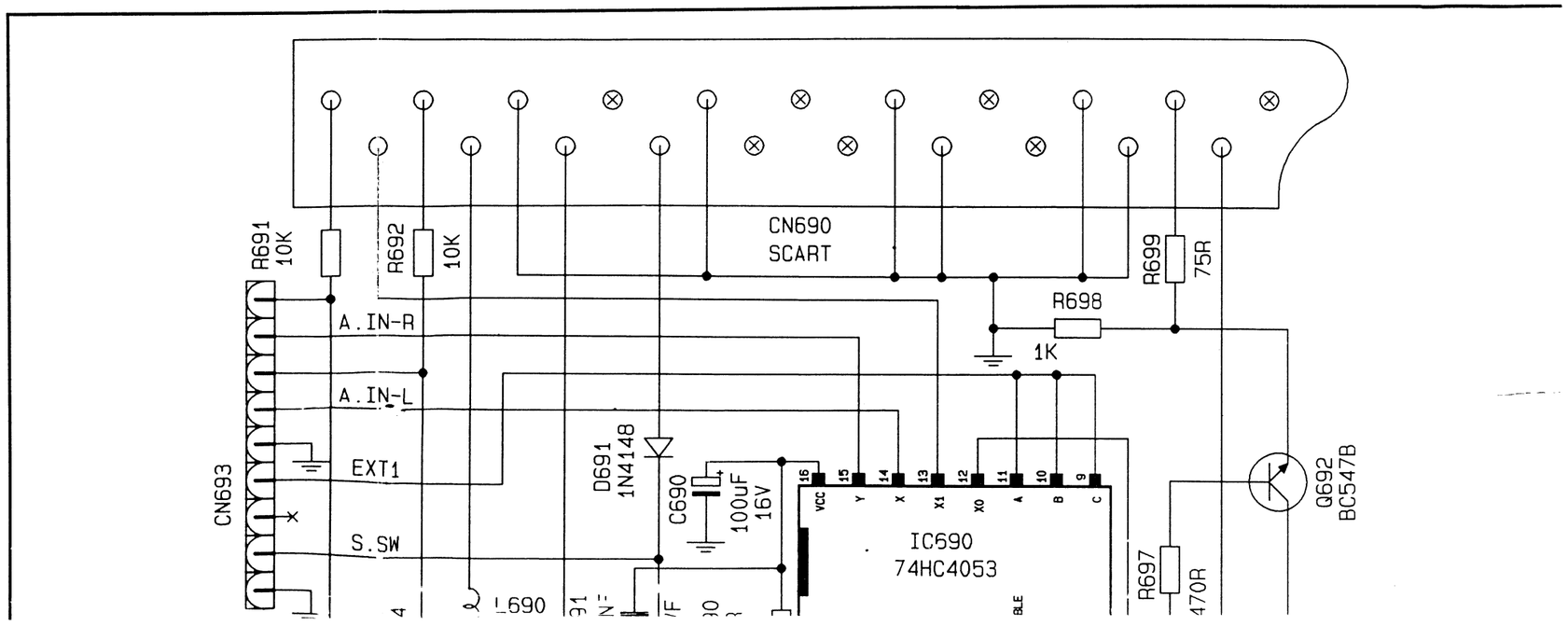

R804 100R
SDA
R805 100R
SCL
5V
D800 1N4148
R806 680K
R807 22R
C816 0u22F
C817 0u47F
C818 100pF
L800 6.8uH
D801 BB405
C819 100pF
R808 1M
C822 0u33F
R809 22K
EM800 6.192MHz
C823 0u022F
R810 1R
T900 TSM2099
C835 27PF
12V
C837 10nF
C838 22uF
REFC2
NC
VCC1
INTCOUT
REFC1
FM/AM
AF.OUT
ABC.D
J806
J807
5V
C839 2.2uF

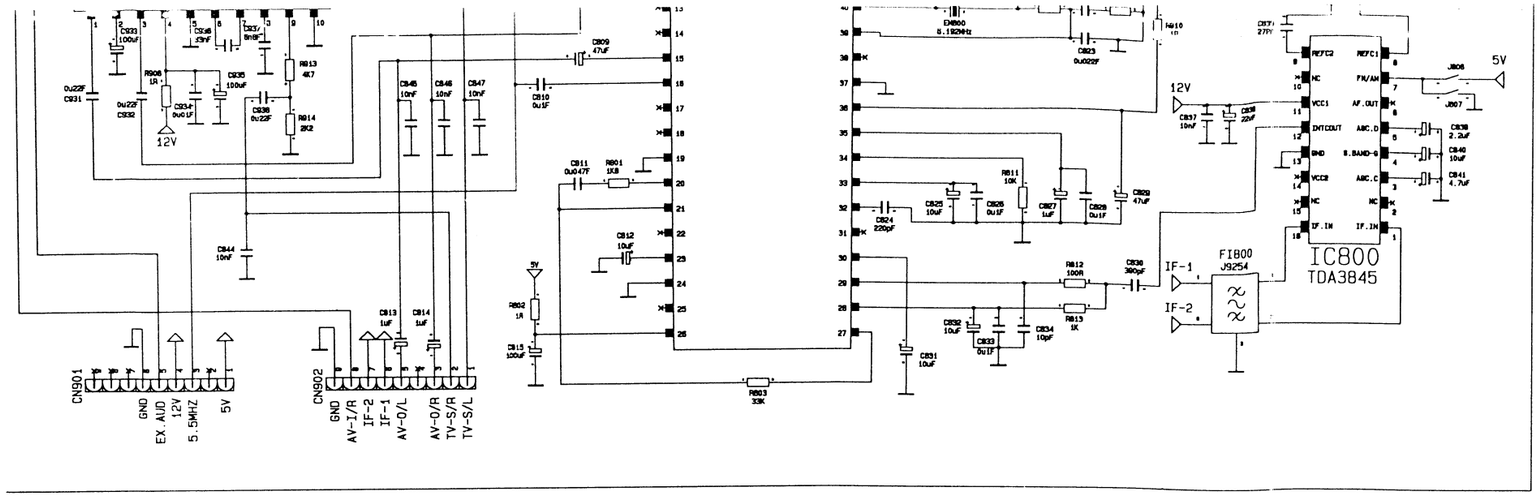

PT- MAIN -V7
T3.15AL
F01
TR1
TR601
TR602
EM1
EM2
C1
C2
R1
CN1
BN1
IC101
IC102
IC251
IC252
IC301
IC302
IC303
IC401
IC402
IC451
CN101
CN102
CN103
CN301
CN302
CN303
CN451
CN601
CN602
CN603
CN652
CN653
EM101
EM102
EM302
EM451
SW301
SW302
SW303
SW304
LED301



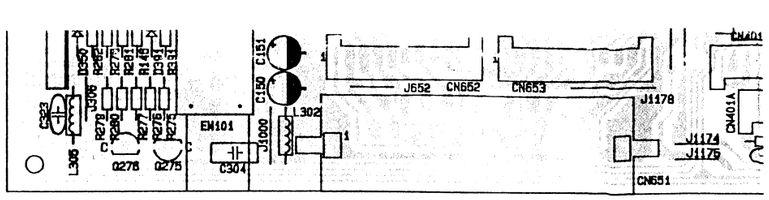


FASTEXT BOARD CIRCUIT DIAGRAM / FASTEXT BAUSTEIN SCHALTUNGSPLAN

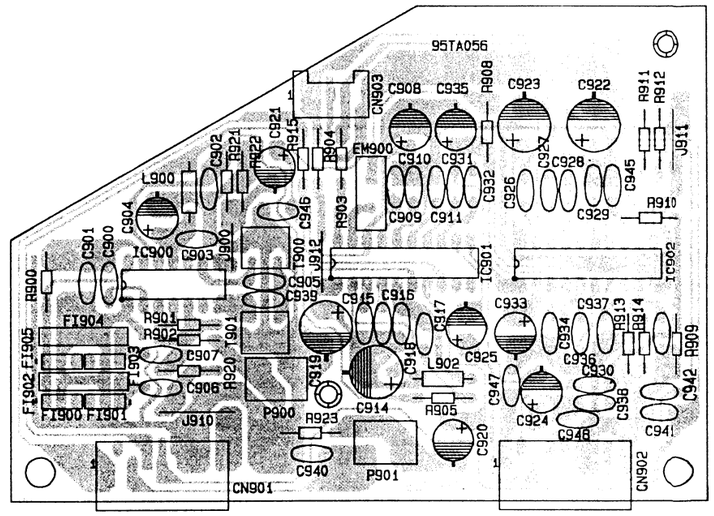




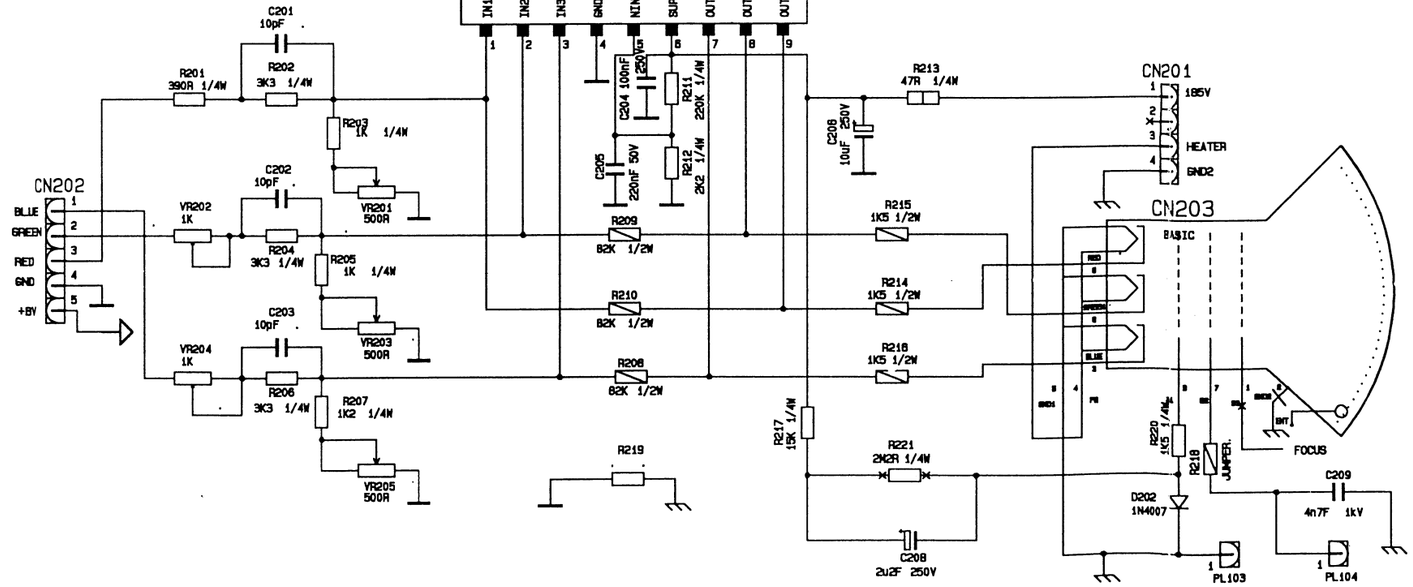
CAM BOARD CIRCUIT DIAGRAM / NICAM BAUSTEIN SCHALTUNGSPLAN



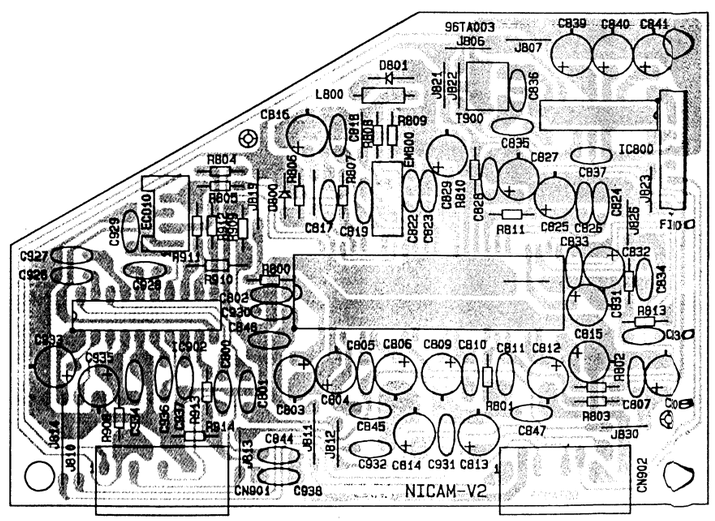
MAIN CHASSIS BOARD / CHASSISPLATE



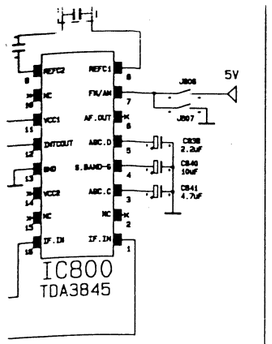
GERMAN STEREO BOARD / GERMAN STEREO BAUSTEIN

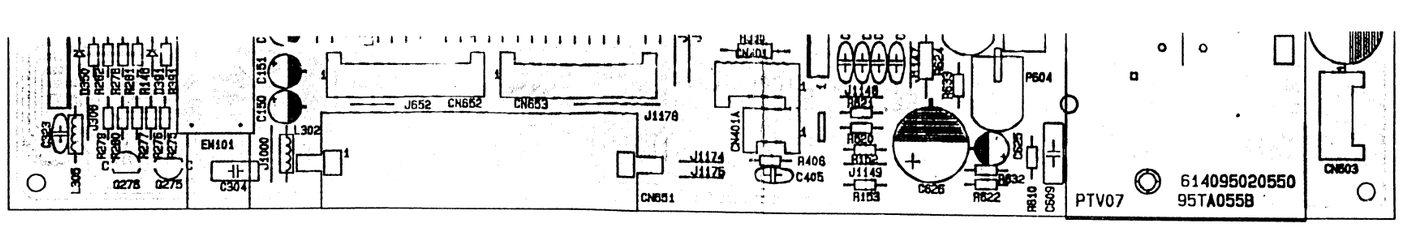


T BOARD CIRCUIT DIAGRAM / CRT BAUSTEIN SCHALTUNGSPLAN

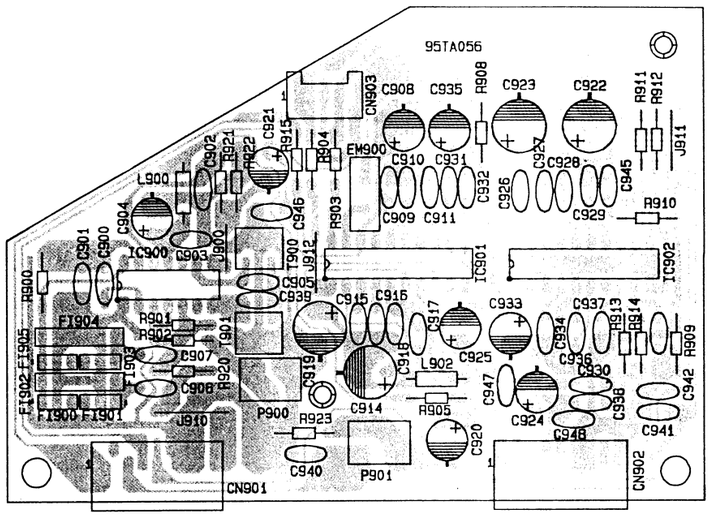


NICAM BOARD / NICAM BAUSTEIN

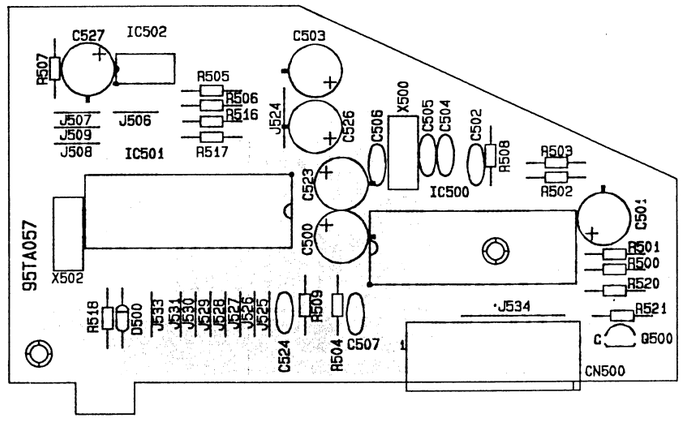




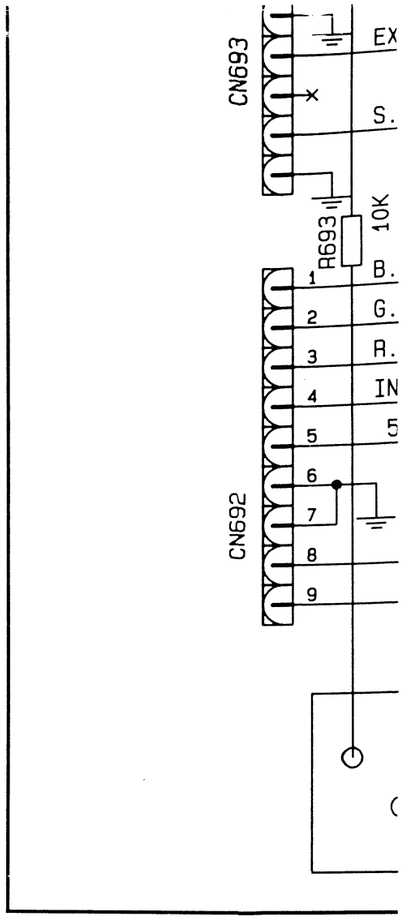
MAIN CHASSIS BOARD / CHASSISPLATE



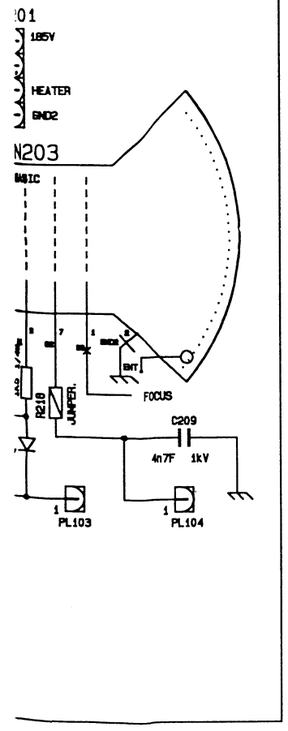
GERMAN STEREO BOARD / GERMAN STEREO BAUSTEIN

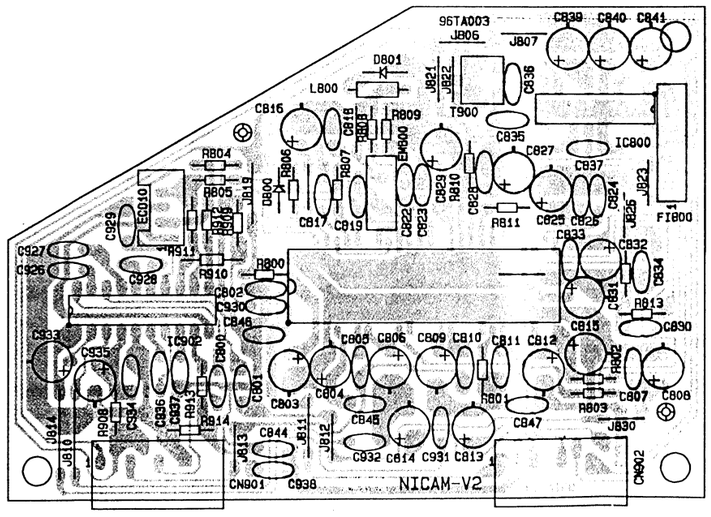


FASTEXT BOARD / FASTEXT BAUSTEIN

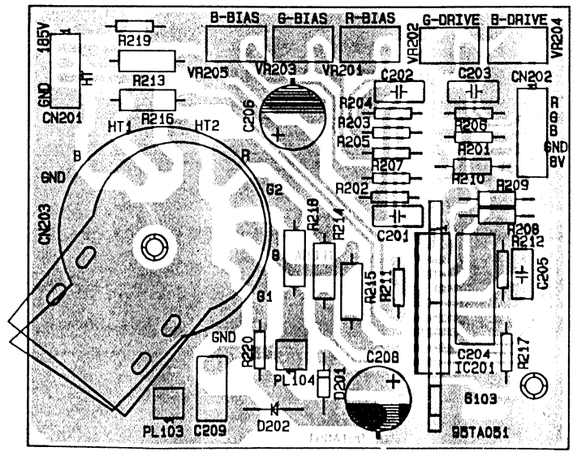


DOUBLE SCART BOARD CIRCUIT DIAGRAM / D

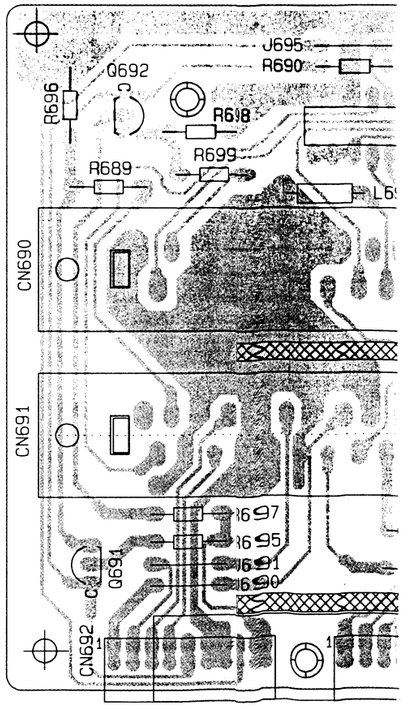




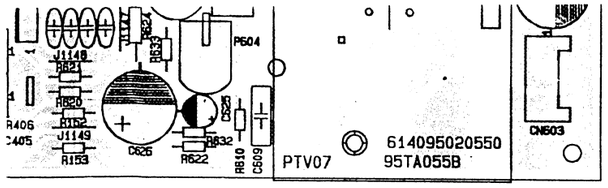
NICAM BOARD / NICAM BAUSTEIN

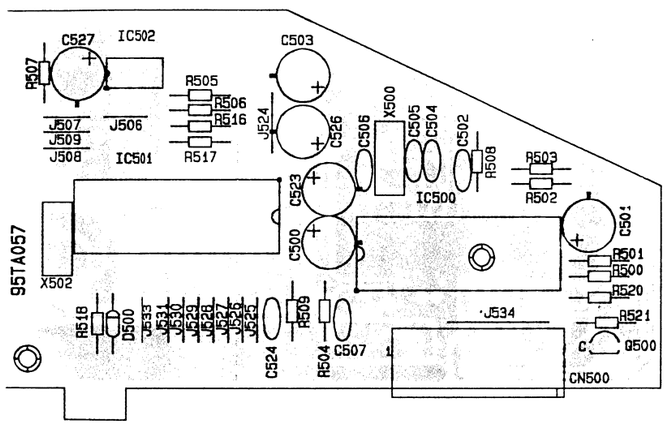


CRT BOARD / CRT BAUSTEIN

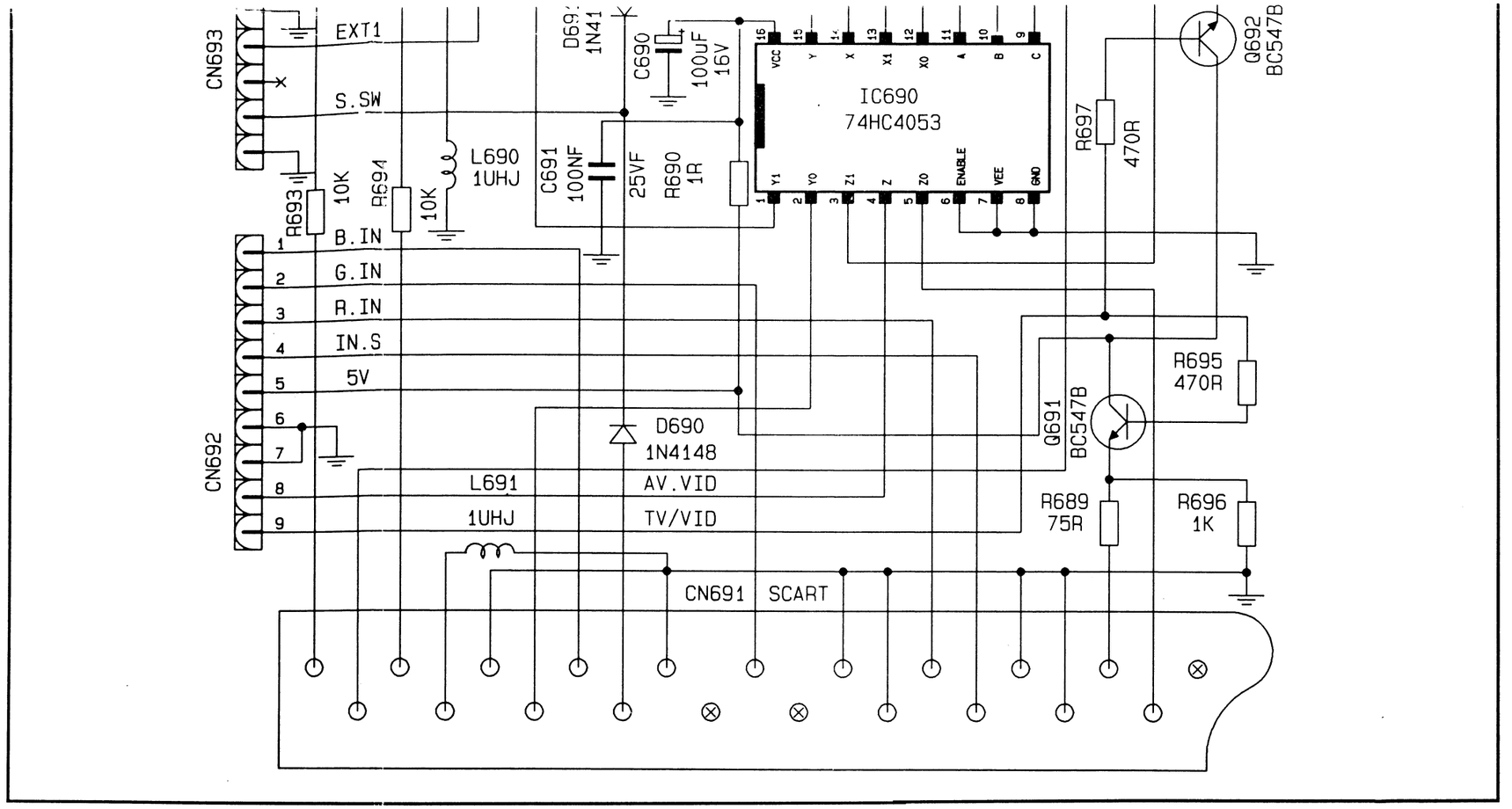


DOUBLE SCART BOARD / D

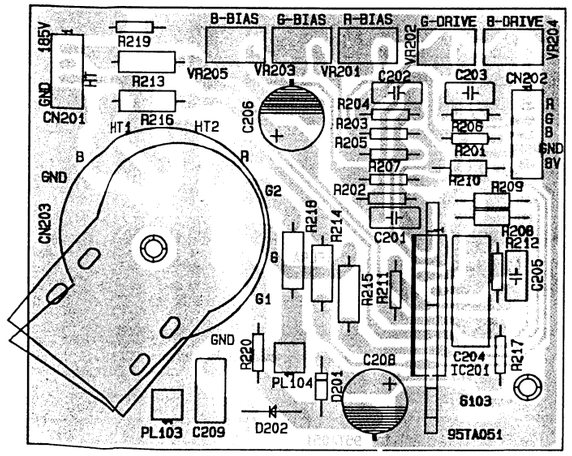




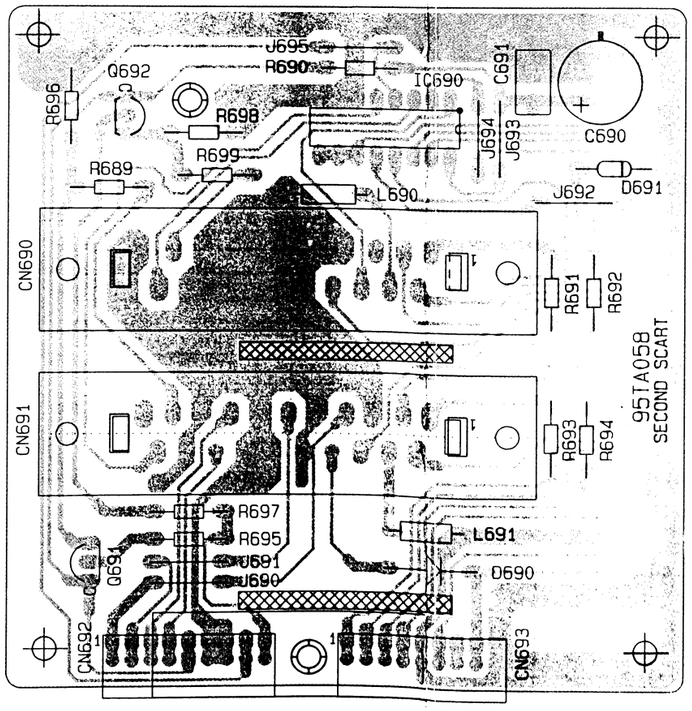
STEXT BOARD / FASTEXT BAUSTEIN



DOUBLE SCART BOARD CIRCUIT DIAGRAM / DOPPEL - SCART BAUSTEIN SCHALTUNGSPLAN



CRT BOARD / CRT BAUSTEIN



DOUBLE SCART BOARD / DOPPEL - SCART BAUSTEIN

COMPONENT	C 607	R 647	L 602	C 608	R 153
CRT					
20" SAMSUNG	8.2NF	0.1R	JUMPER	470NF	15K
A48ECR 11X60	1600V	1 W		200V	1/6 W
20" SAMSUNG	8.2NF	0.1R	JUMPER	470NF	15K
A48ECR 11X60	1600V	1W		200V	1/6 W
21" SAMSUNG	7.8NF	0.1R	56uH	470NF	15K
A51EER 11X38	1600V	1 W		200V	1/6 W
20" POLCOLOR	7.8NF	0.1R	110uH	470NF	15K
A48EEV 13X01	1600V	1 W		200V	1/6 W
21" POLCOLOR	6.8NF	0.1R	110uH	470NF	15K
A51EEV 13x01	1600V	1 W		200V	1/6 W
20" VIDEOCOLOR	7.8NF	0.1R	110uH	470NF	15K
A48EBV 13X01	1600V	1 W		200V	1/6 W
21" VIDEOCOLOR	6.8NF	0.1R	56uH	470NF	15K
A51EBV 13X09	1600V	1 W		200V	1/6 W

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